

Manufacturers Record

Industry Construction



\$6.50 per Year.
Single Copy, 20 Cents.

Baltimore, Md.
DECEMBER 25, 1930



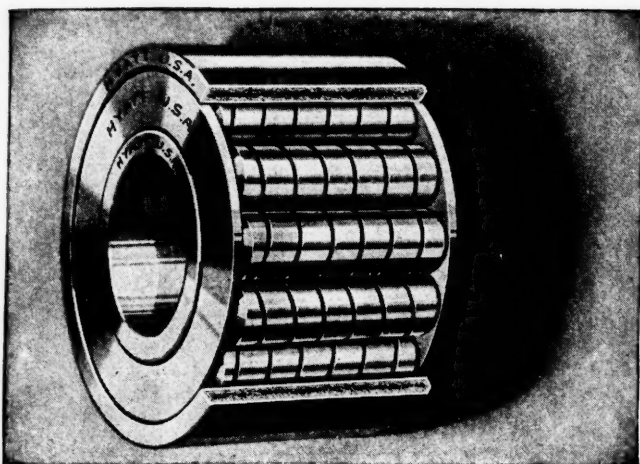
The Manufacturers Record

Extends to Its Readers
Best Wishes for

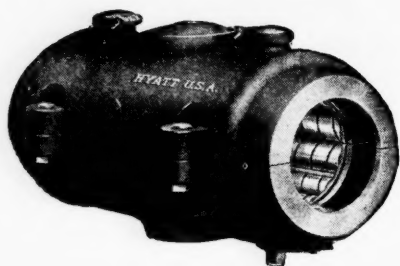
A Happy Christmas
and
A Prosperous
New Year



Hyatt Roller Bearing with outer race cut away to show distinctive and sturdy roller construction.



Hyatt Roller Bearings are everywhere, saving power, reducing maintenance and adding years of life to the equipment they protect



There are more than two million Hyatt Line Shaft Roller Bearings serving industry today. Ask your mill supply dealer about them or write us for further data.

In gigantic cranes and rolling mill tables . . . in railroad car journals . . . in automobiles and trucks . . . in looms and spinning frames . . . in power shovels and road rollers . . . in tractors and implements . . . in material handling equipment and all kinds of machinery, as well as in the motors and the transmission equipment which drives them.

No load is too heavy, no task too severe for sturdy Hyatts. Not a demand of bearing performance . . . long life . . . freedom from care and adjustment, that Hyatt bearings do not meet and answer.

These inherent Hyatt qualities serve and safeguard performance. They prolong, as they protect, operating life. They stubbornly oppose all evils that combine to make unsatisfactory, costly operation.

Hyatts, therefore, are designed into all products with assurance that they are the better bearings and do all things well.

HYATT ROLLER BEARING COMPANY
Newark Detroit Chicago Pittsburgh Oakland

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

for U.S. Gypsum Co. Chicago

North-
west

BELOW is shown the first Northwest shipped to the U. S. Gypsum Company in 1923—seven years ago. This machine is still in service!

In these seven years of profitable operation, it has built up a reputation that played a large part in the choice of a Northwest to solve a peculiar problem at the U. S. Gypsum Company's pits at Alabaster, Michigan.

Let us tell you about it!

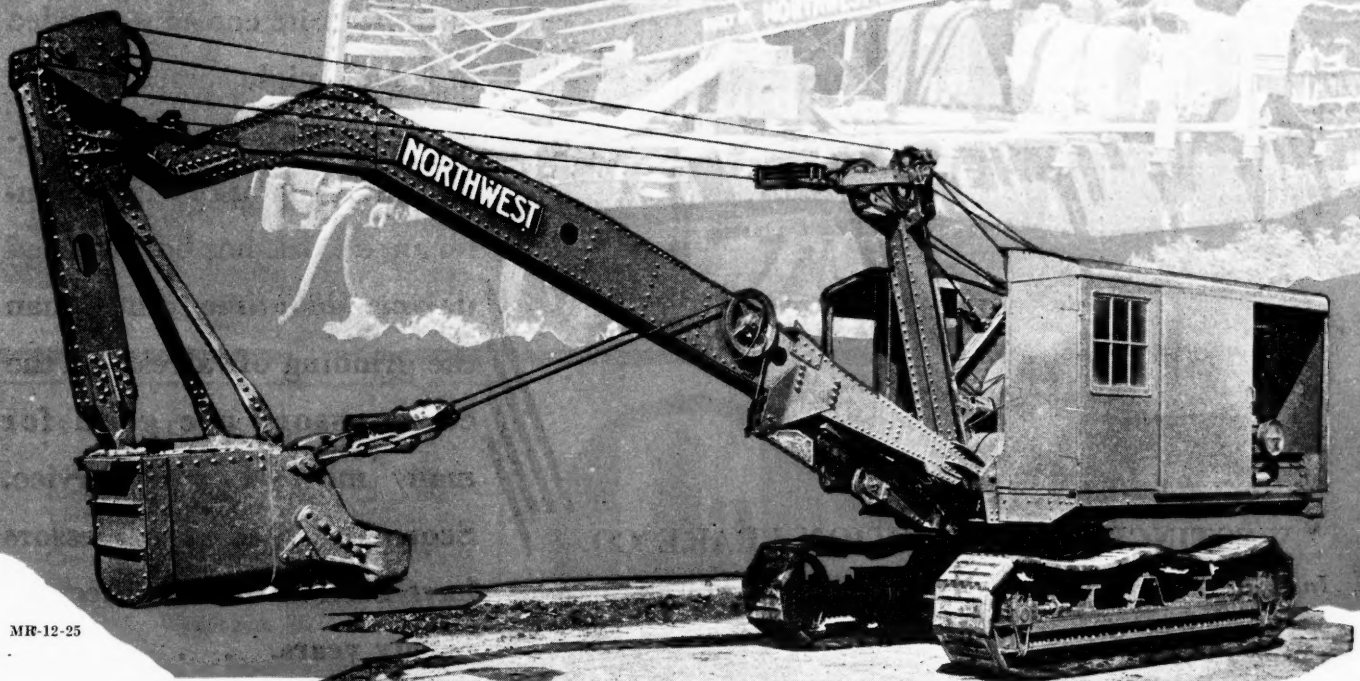
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The world's largest exclusive builders of gasoline, oil burning and electric powered shovels, cranes and draglines.

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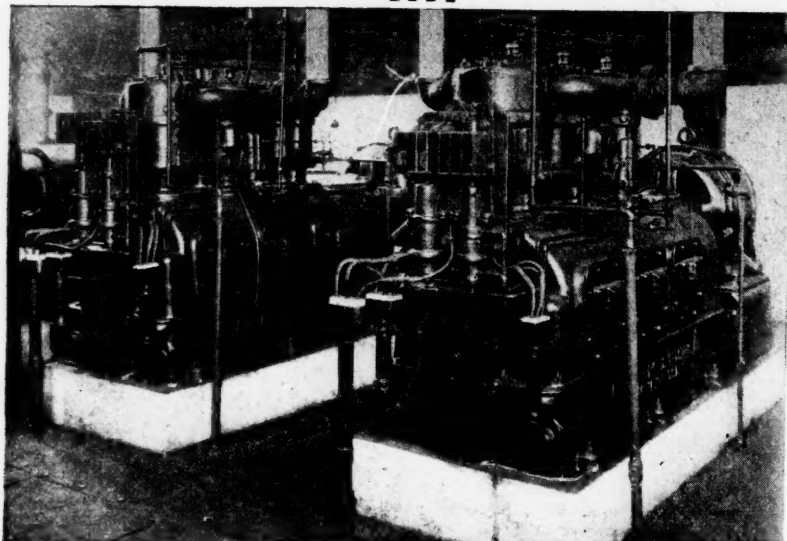
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MR-12-25

NORTHWEST

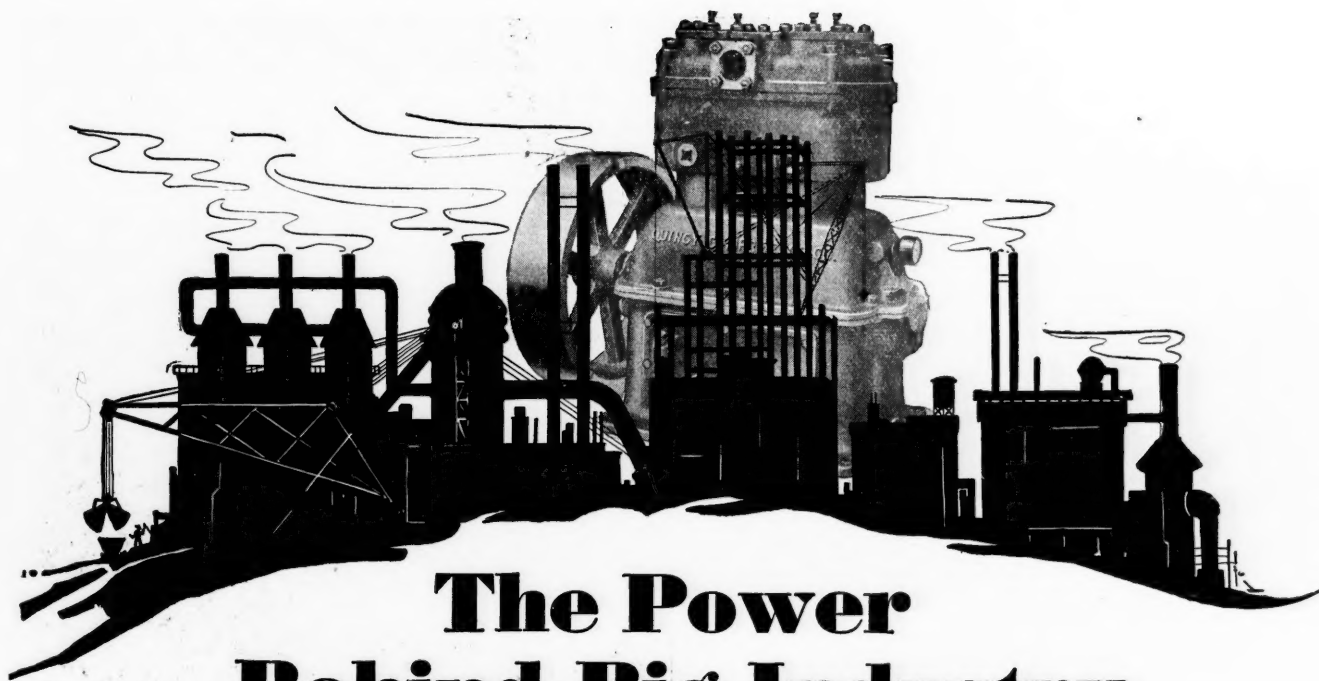
Where **DURABILITY** *is outstanding*
there you'll find



WESTINGHOUSE- NATIONAL Air Com- pressors

WESTINGHOUSE TRACTION BRAKE CO.
Industrial Division - - - **PITTSBURGH, PA.**

Trouble-free service year after year is common with Westinghouse-National Air Compressors. They are built to endure. Reliability and low maintenance are their outstanding characteristics. Hundreds of them are being used in factories, with marked success, for every conceivable pneumatic requirement... The two machines illustrated - 3VS-24, 335 cu. ft. displacement - have been in constant service day and night since 1923, furnishing air for yard charging and shop use. No maintenance work has been needed during this time other than the grinding of valves, and the compressors are good for many more years of service. Scores of their predecessors have been in use for fifteen to twenty years.



The Power Behind Big Industry

More and more every year, manufacturers are learning the value to them of compressed air as power and as a convenience.

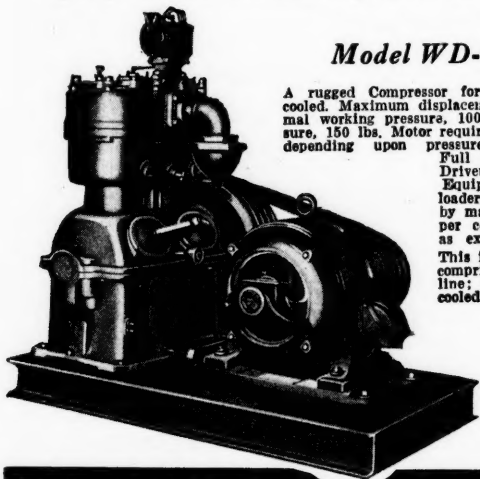
As power, it is wonderfully flexible, and operates all kinds of tools, paint sprays and pneumatic lifts efficiently and economically.

As a convenience, it blows dirt from machines, spray-cleans machinery, and does a hundred

other odd jobs that save time and make for tidiness.

In Quincy Compressors, Industry finds the utmost in mechanical perfection; quiet operation, low power and maintenance costs, long life. The first cost is also low when the high standard of excellence is considered.

Write or use the coupon below, to obtain all necessary information.



Model WD-4 Duplex

A rugged Compressor for heavy duty. Water cooled. Maximum displacement, 128 cu. ft. Normal working pressure, 100 lbs. Maximum pressure, 150 lbs. Motor requirements, 15 to 20 H.P., depending upon pressure and displacement. Full pressure lubrication. Driven by Multiple V Belt. Equipped with Pressure Unloader. Air Filter, warranted by manufacturer to be 99.9 per cent efficient, supplied as extra equipment. This is only one of 14 sizes comprising the great Quincy line; water cooled and air cooled.

QUINCY COMPRESSOR CO.,
216 Maine St., Quincy, Ill.

Please send complete story of Quincy Compressors as applied to my individual business.

Now use compressed air for.....

Could use compressed air for.....

Firm Name.....

Line of Business.....

Address.....

City.....State.....

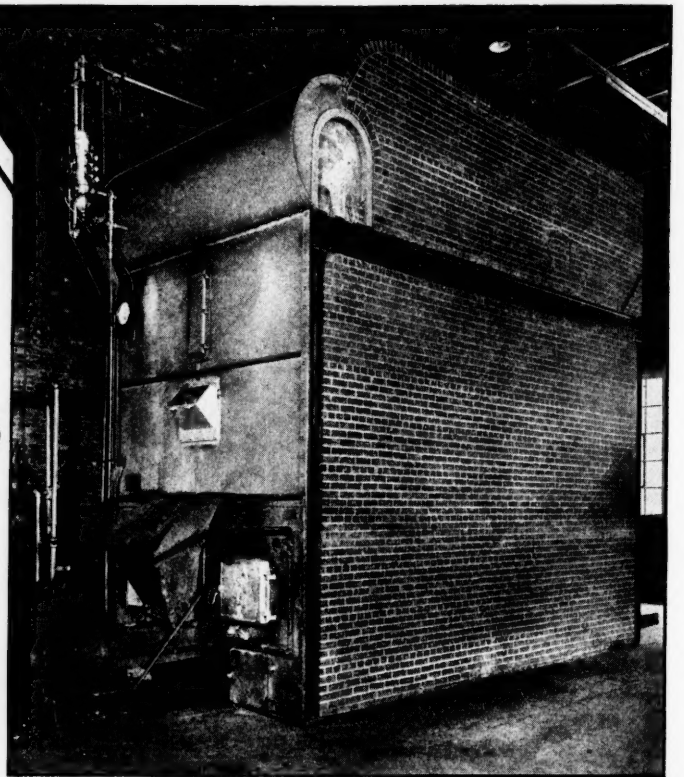
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Also in other important centers

QUINCY
Compressors
216 MAINE ST.
Quincy, Illinois

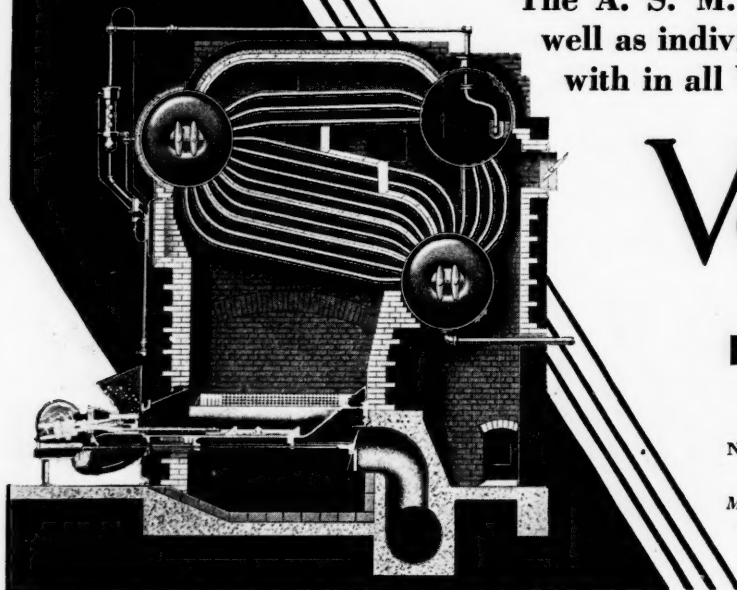
For Every Boiler need. *from 80 to 400 Horsepower!*



The Vogt Class M Low Type Boiler takes the place of all other designs of small boilers because it combines all the advantages sought for, including increased ratings, higher steam pressures, and adaptability to space limitations. The design is not new—it is merely an adaptation of the Vogt Class L Low Type Boiler which has always been considered good design.

Whether for heating or power, economical operation is assured and any fuel or fuel burning device may be used. The above installation was recently completed for the Brown Wood Preserving Company at Highland Park, Kentucky.

The A. S. M. E. Boiler Construction Code, as well as individual state laws, is strictly complied with in all Vogt boilers.



The Vogt *Water Tube* **Boiler**

CLASS M LOW TYPE

HENRY VOGT MACHINE CO.

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Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery, Heat Exchangers.

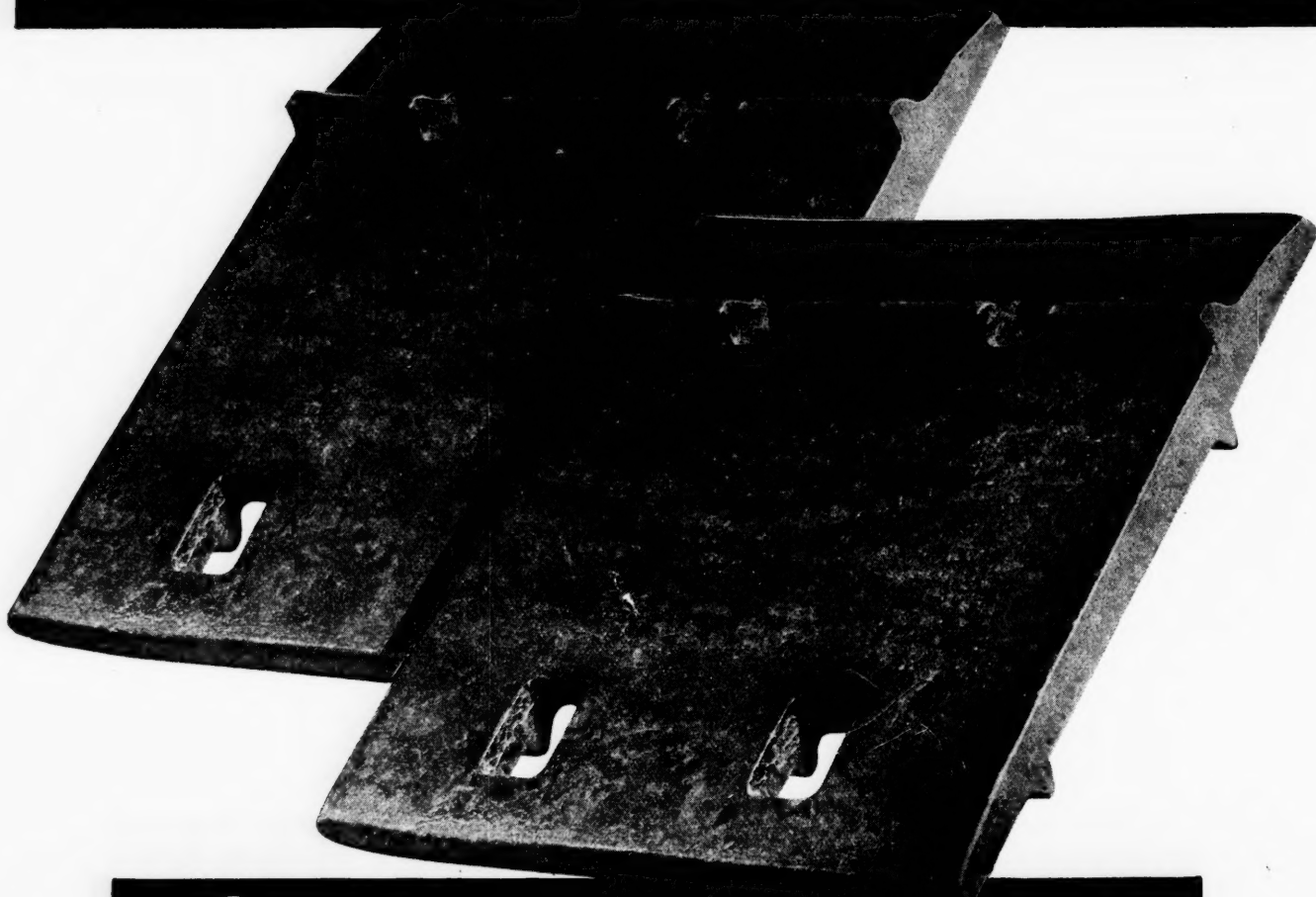


We Wish You
a
Merry Christmas
and a
Prosperous New Year

EARLE GEARS

THE EARLE GEAR & MACHINE CO.
4719 Stenton Avenue
Philadelphia, Pa.

TENNESSEE TIE PLATES



-for Superior Service

TENNESSEE High Carbon Hot Worked Tie Plates represent the highest standards of tie plate excellence. Being of rail steel carbon, they endure with the rail and their method of manufacture, which includes an annealing process, so toughens them that breakage is reduced to a negligible minimum. They present a remarkable resistance to corrosion . . . a fact which has been amply demonstrated by tests under various service conditions over a period of years. These plates are standard with many of the largest trunk lines in the country and their continued purchase year after year is convincing evidence of their superior quality and design, and that they have stood the test of service.



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PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

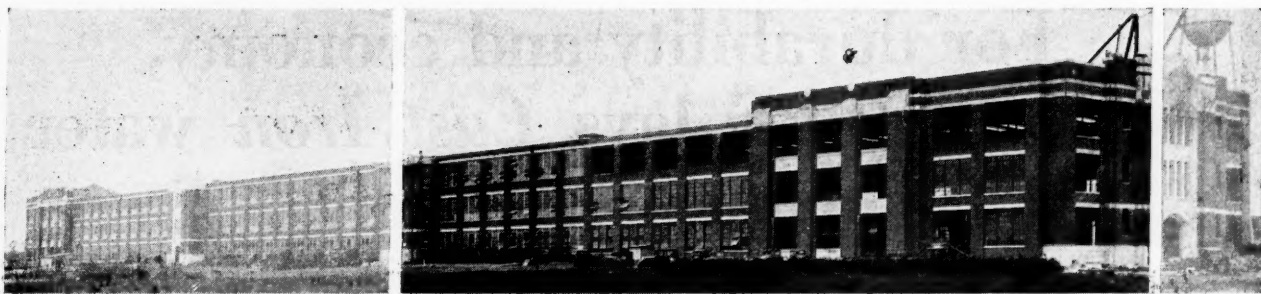
AMERICAN BRIDGE COMPANY
AMERICAN SHEET AND TIN PLATE COMPANY
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CARNEGIE STEEL COMPANY
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Pac. Coast Distributors—United States Steel Products Co. Columbia Dept., San Francisco, Los Angeles, Portland, Seattle, Honolulu. Export Distributors—United States Steel Products Co., New York City



Re-Tiring South

BUT nothing of let-up or ease-taking in either Goodrich or Goodyear. Both are simply applying the fundamental laws of raw materials, markets, freight rates and production costs.

Sound business judgment influenced these two leaders in tires to extend South, and for the same reason they used our facilities and organization in furnishing and erecting the steelwork for their new plants.

You can just as safely entrust to us your problems and needs in structural steel whether they be large or small.

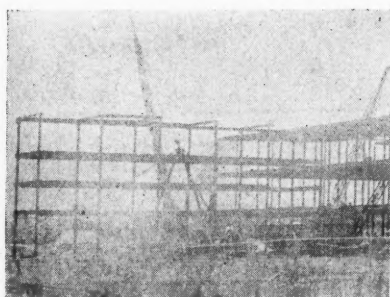
VIRGINIA BRIDGE & IRON CO.
 Roanoke Birmingham Memphis Atlanta New Orleans
 New York Los Angeles Charlotte Dallas El Paso

Top: Martha Mills of B. F. Goodrich Tire & Rubber Co., Thomaston, Ga. Batson-Cook Co., West Point, Ga. General Contractors, Robert & Co., Atlanta, Architects and Engineers.

Right and Below: End and Broadside views of Goodyear Tire & Rubber Co., Rockmart, Ga. Robert & Co., Atlanta, Architects and Engineers.



VIRGINIA BRIDGE
 STEEL STRUCTURES



For durability and economy, LOUISVILLE lays *Cast Iron* water mains exclusively

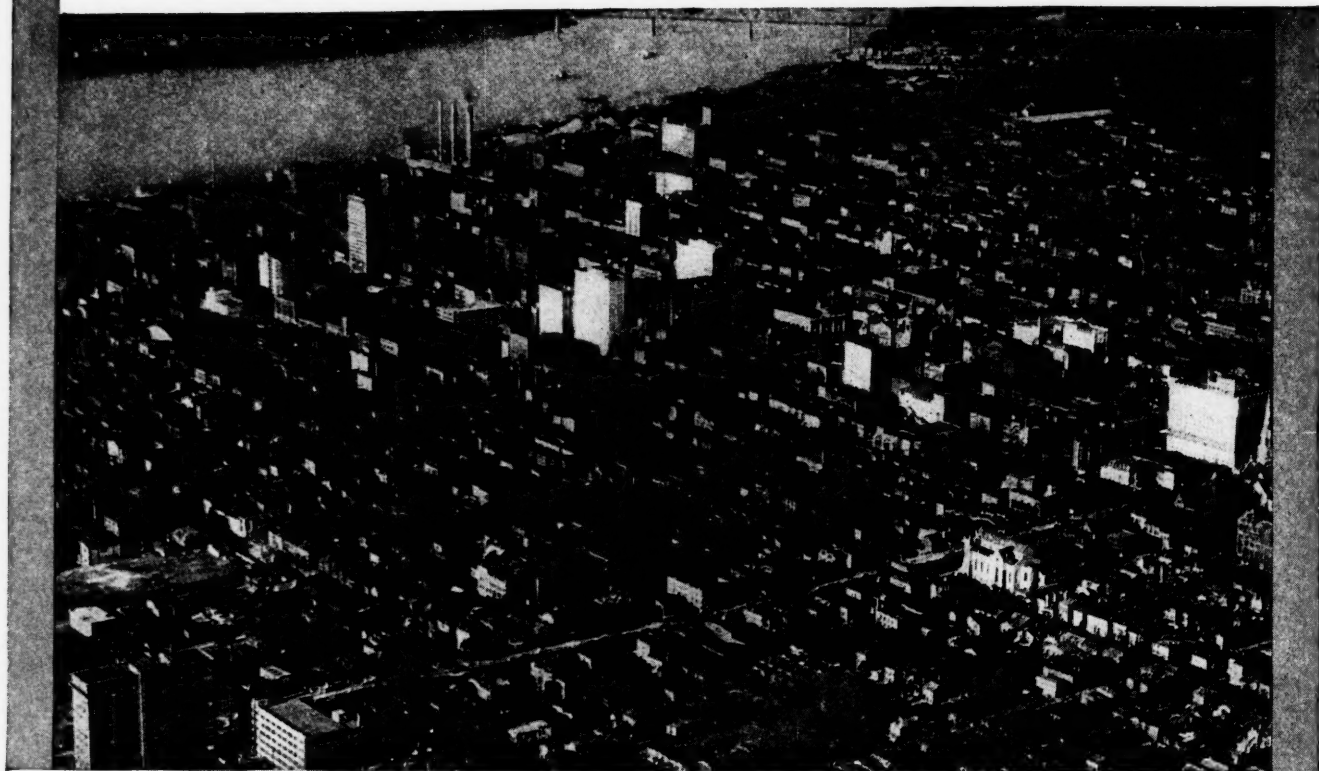


Photo by Ewing Galloway, N. Y.

"THE first cast iron pipe in Louisville was laid in 1860," writes Mr. John Chambers, Superintendent of the Louisville Water Co. "This pipe is still in service. We have no mains that are not of cast iron. Our mains vary in size from four inches to seventy-two inches in diameter."

The splendid performance, low maintenance costs and great durability of cast iron pipe have proved the wisdom of using cast iron mains exclusively. In regard to large diameter pipe, Louisville finds cast iron particularly economical. Many other cities endorse Louisville's judgment. In fact, during the past year, more large diameter cast iron pipe was produced than ever before.

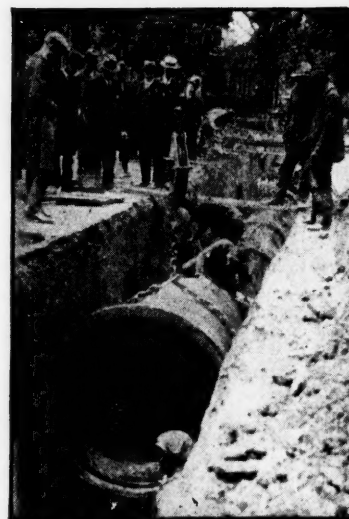
The reason for the durability of cast iron pipe is its effective resistance to rust and corrosion. Water and gas mains of ferrous metal (iron and steel) with the exception of cast iron, disintegrate from rust.

Cast iron pipe is the only ferrous metal pipe practicable for underground mains which rust will not destroy.

For complete information regarding the economy of specifying cast iron pipe for water, gas, sewers, culverts or industrial needs, write to Thomas F. Wolfe, Research Engineer, 309 Peoples Gas Building, Chicago, Illinois.

✱ ✱ ✱

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe foundries: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N. J.; Warren Foundry and Pipe Company, 11 Broadway, New York.



Engineers inspecting the installation of a large diameter cast iron main in Louisville, Kentucky.



The "Q-check" symbol shown above has been adopted as the trade mark of The Cast Iron Pipe Research Association.

CAST IRON PIPE

Now you can buy *Temlok*
in either
INCH OR HALF-INCH THICKNESSES



ARMSTRONG'S Temlok, the new low-cost fibre board for roof insulation, will be made from now on in *both inch and half-inch thicknesses*.

This is for your convenience.

The Armstrong Cork & Insulation Company recommends the solid-inch of roof insulation. But—if you prefer an inch of insulation in laminated half-inch layers, you can specify this. Or, where you deem a half-inch thickness adequate, you will be able to get Armstrong's Temlok in that size.

This range of thicknesses adds another advantage to the many features of Temlok. Fabricated from the heartwood of Southern pine, it is priced within the scale of other fibre insulations. It has extremely low conductivity—only .31 B. t. u., per square foot, per inch thickness, per degree Fahrenheit temperature difference, per hour, at 60 degrees mean temperature.

Also, Temlok's moisture absorption is less than that of any other fibre board. And it provides a strong, secure base for roofing.

We shall be glad to send you complete information and a sample of Armstrong's Temlok. There is no obligation, of course.

Armstrong's Just write to Armstrong Cork
(A) & Insulation Company, 944
Product Concord St., Lancaster, Pa.

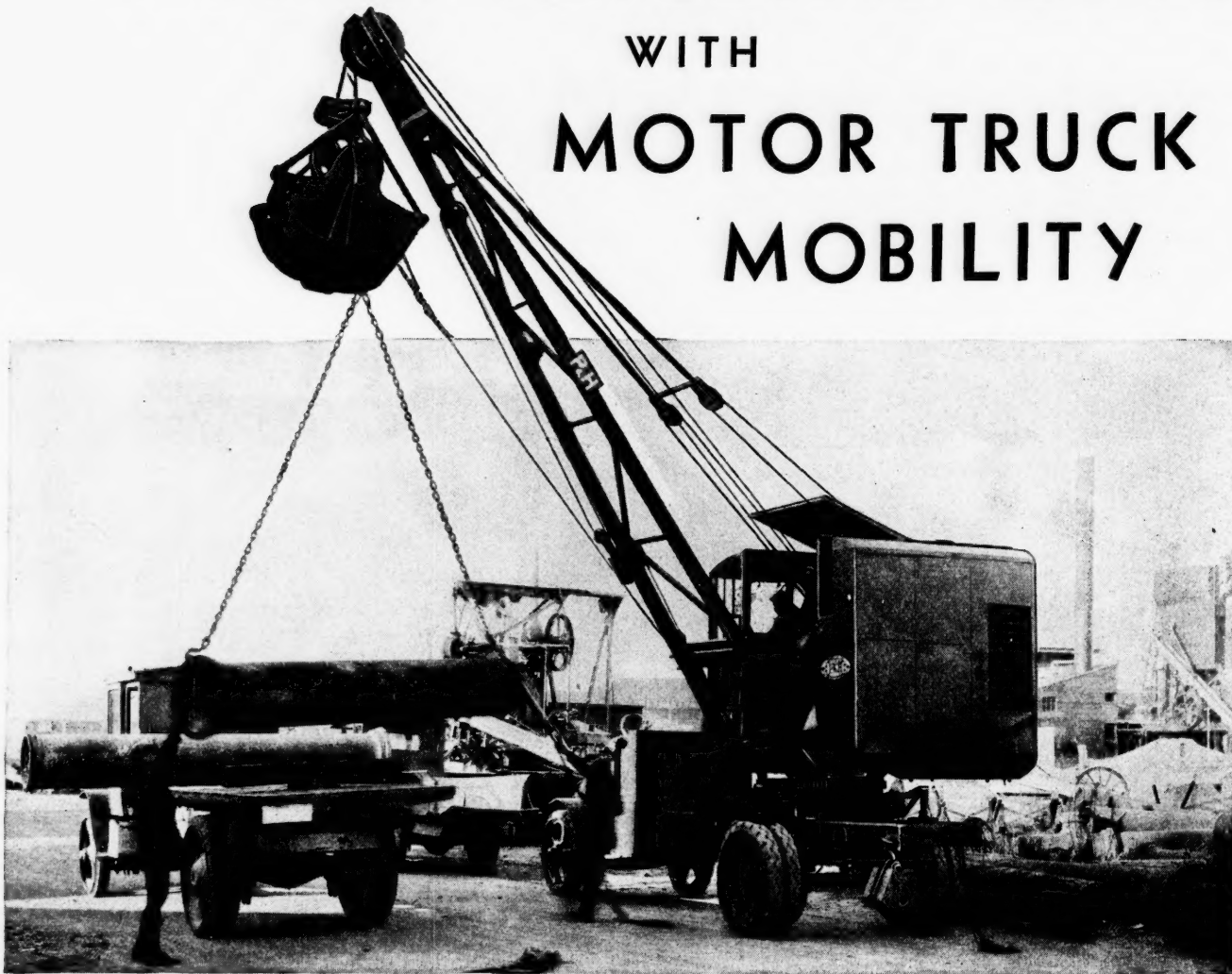
**Armstrong's
Temlok**

*Roof Insulation that's so Economical
and Efficient*

A FULL REVOLVING CRANE

WITH

MOTOR TRUCK MOBILITY



P & H

TRUCK

CRANE

*Built in Capacities
of 5, 6 and 7½ tons*

THE complete range of usefulness of a revolving crane is fully and quickly available through this handy unit. ¶ The P & H Truck Crane is a standard P & H half-yard revolving crane. But instead of the usual slow crawlers, it is mounted upon a truck chassis. Thus it makes crane service available at truck speed. It will travel with your trucks or move rapidly about your plant or storage yard, handling bucket, sling, hook or magnet with equal efficiency. ¶ Write for bulletin TC-1, which describes the P & H Truck Crane in detail.

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Established in 1884

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PAVING BREAKER

**A heavy block type
hammer with a long
stroke (7 $\frac{1}{4}$ ")**

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Branches In All Principal Cities

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GARDNER-DENVER

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Analysis tests and inspection of all
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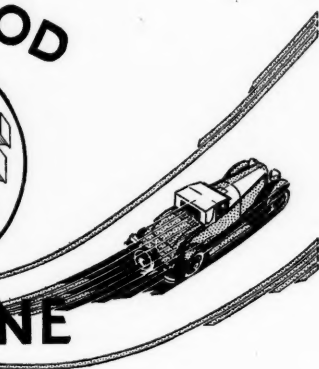
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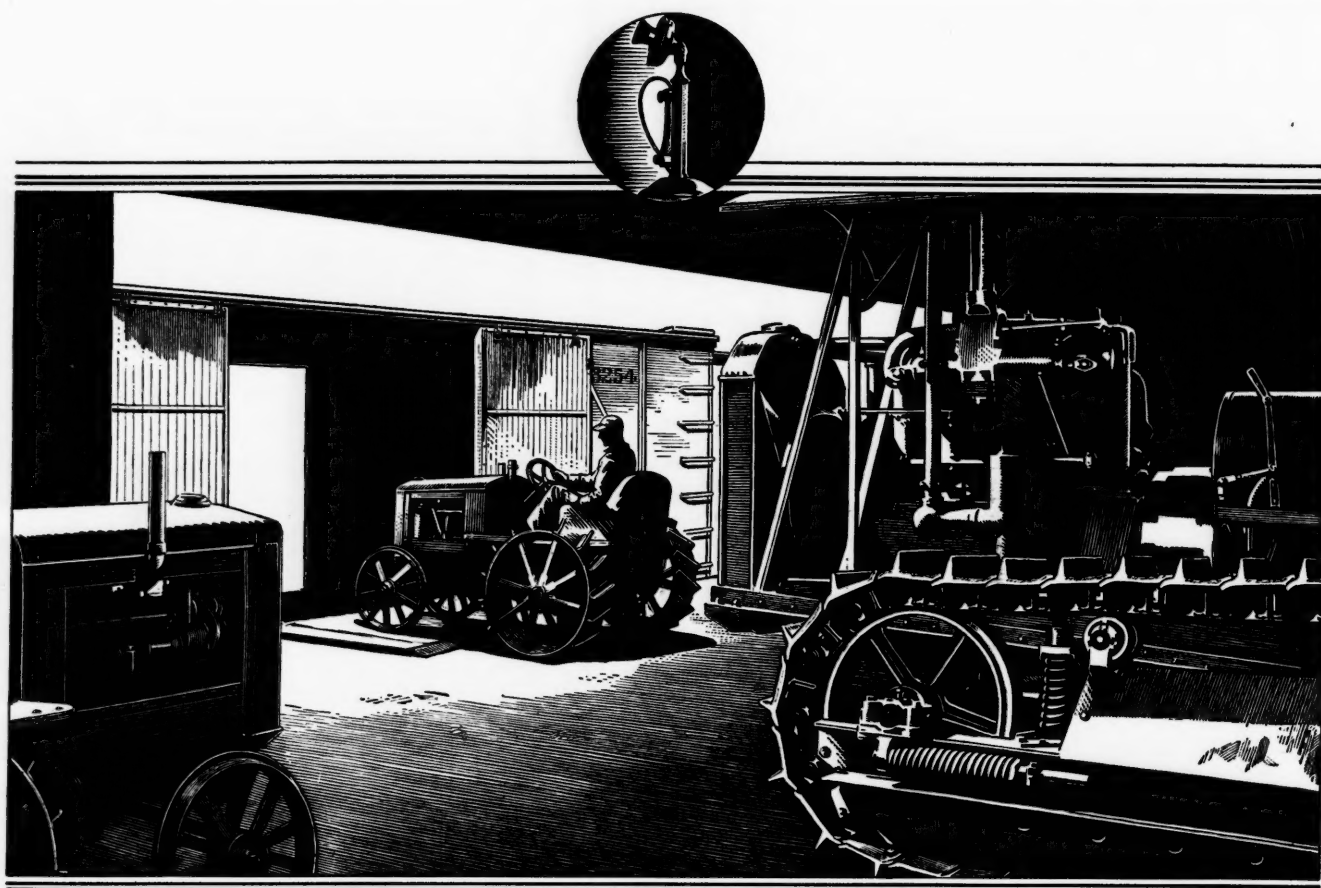


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MANUFACTURERS RECORD

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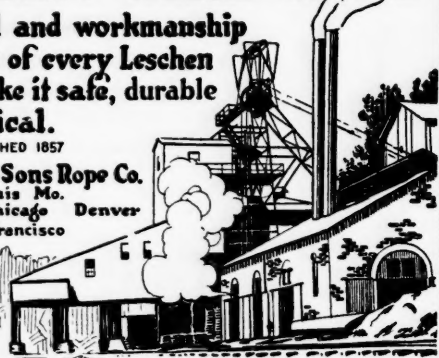
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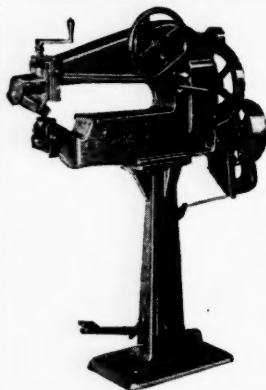
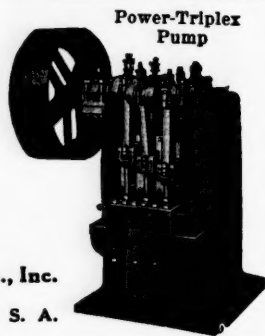
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Vol. XCVIII No. 26
Weekly

BALTIMORE, DECEMBER 25, 1930

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Life Insurance — A Bulwark

THE continued heavy increase in life insurance in this country is to be regarded as an advance in America's progress that is worthy of special emphasis. It is interesting and important, because of the growth in investment it represents on the part of the American public and because it stands as a bulwark in time of need and a blessing for the helpless. The general public, however, is not fully appreciative of what life insurance as an industry means to national welfare. For this reason, the following facts and figures which were presented before the recent annual meeting of life insurance presidents, are worthy of study and dissemination.

"Larger payments than ever before to policyholders and beneficiaries by the United States life insurance companies this year have lessened the effect of the nationwide depression," declared Chairman James Lee Loomis. Mr. Loomis reported that the total of these disbursements by the end of 1930 will reach \$2,200,000,000, an increase of \$238,000,000 over the previous record amount, dispersed in 1929. Of the \$2,200,000,000 paid out this year, approximately \$1,325,000,000 was paid to living policyholders as dividends, matured endowments, annuities, disability benefits and cash surrender values. Even though the amount for cash surrender values is larger this year, it indicates that life insurance is serving pressing human needs, for when all other resources have failed the policy holder turns to his insurance equity.

Mr. Loomis also called attention to the fact that the amount of new life insurance purchased in 1930 by the American people will reach \$18,500,000,000—a striking evidence of American character, confidence and vision. This sum exceeds by \$1,100,000,000 the average yearly purchases of the five preceding record-breaking years and is not quite 4 per cent under the previous peak, reached in 1929.

It is estimated that \$108,500,000,000 of life insurance will be in force in the United States at the end of 1930, which is five times the amount of insurance in force at the end of 1914 and, what is more significant, the insurance now in force is double the amount of eight years ago.

This \$108,500,000,000 of insurance is for the protection of 68,000,000 policyholders, representing 54 per cent of the country's population. It offers abundant evidence that the American people have faith in the

solid protection of life insurance for the ultimate security of their families.

"More than 70 per cent of the total life insurance in force throughout the world is in the United States," according to Frank L. Jones, vice-president of the Equitable Life Assurance Society, who presented an international life insurance survey to the convention. The world's wealth is estimated at 1000 billion dollars. The wealth of the United States is about 350 billion dollars, or 35 per cent of the world's total, yet this country has only 6.2 per cent of the world's population. "It is a striking achievement," said Mr. Jones, "that the percentage of life insurance in the United States to the world's total is double our percentage of the world's wealth."

The nation's life insurance industry, however, is far broader in its benefits than merely an assurance of protection to its policyholders. This point was emphasized by Walton L. Crocker, president of the John Hancock Life Insurance Company, who stated that in a year of business recession the investments of United States life insurance companies will be increased by \$1,418,000,000 to a total of \$18,900,000,000. In submitting these figures, Mr. Crocker said that investments at the close of 1930 will be double those held seven years ago. Out of the aggregate investment of 52 leading companies—representing over 91 per cent of the total assets of all life insurance companies in the country—the leading investment medium was the real estate mortgage which comprised 40.3 per cent of the assets. Stocks and bonds, second in investment importance, represented 37.6 per cent and railroad securities constitute 17 per cent of life insurance assets. Mortgages on city property amount to \$5,108,000,000 and those on farms to \$1,886,000,000. Referring to the farm mortgage situation, Mr. Crocker said:

"The farm mortgage as a whole presents at the present time what is perhaps the most interesting and significant situation in life insurance investing. The life insurance companies' investment of \$1,886,000,000 in farm lands is about one-fifth of the mortgages of over \$9,000,000,000 in force against the farm valuation of \$45,000,000,000.

"Life insurance funds and agricultural expansion on this continent met and formed a practical union many years ago. The years brought steady accretions to the account as more and still farther afield grew and spread the farms of our land, so that a quarter of a century since found the farm mortgage aggregate held by the life companies equalling 9.3 per cent of the assets. From that time until the end of 1924

there occurred a notable acceleration of these investments, the most rapid growth concurring with what has since been plainly seen as a general inflation of valuations. Since 1924, when the farm loans held comprised 18.7 per cent of the assets, the ratio has declined, although lending continued in substantial volume and the aggregate of the farm investment rose until the end of 1927, when it reached the high peak of \$1,983,000,000, representing 15 per cent of the total assets of the companies concerned. There has since been a slight decline in actual funds loaned upon such properties, though the aggregate of the loan is still within \$100,000,000 of the 1927 peak.

"The impressive aggregate of the funds loaned to the farmers shows how much the life insurance companies have had to do with the great expansion of agriculture in this country.

"At the moment, farm mortgage investors in this country in general are faced with a waiting period of indeterminable length as reluctant owners and actual operators of more farms than were ever before possessed, and as creditors experiencing a growing delinquency in obligations owed.

"At this time farm-lending continues, with due regard for the situation as to new borrowers and in volume also affected by the naturally decreased demand. Our information is that renewals are being granted with freedom where the record is reasonably good. There is no disposition to be harsh with borrowers and there never was. Such a course would be contrary to the interests of the lender. The farms held by the companies are being operated with a general view of encouraging former owners, wherever possible, to remain and to rehabilitate their fortunes to the point of a happy re-possession of their lands and houses.

"Reason and faith together say that the condition will be overcome and a stable level of prosperity again reached. Farm investments as a whole, and always subject to sporadic exceptions, are as stable as agriculture itself. Both may have their slow periods, epochs of reconstruction as the world changes; but underneath is the unceasing demand for the means of life."

Stocks and bonds owned by life insurance companies in 1930 aggregated \$6,531,000,000, while common stock holdings of life insurance companies represented only slightly in excess of one-half of one per cent of the total assets, according to Mr. Crocker.

Public utility securities owned by life insurance companies total \$1,686,000,000. Federal government, state, county and foreign bonds amount to about \$1,333,000,000. The policy loan account is estimated at \$2,473,000,000. While the increase in policy loans during 1930 was 15.6 per cent, it was lower than the peak gain of 19.5 per cent on such loans during 1929.

These facts are impressive as showing the magnitude of the life insurance industry of the country and the part it takes in financing industry.

Equalize Transportation

REACTION to an article on the railroad situation by Mark W. Potter in the MANUFACTURERS RECORD, December 11, is interesting as comment and significant in promotion of further constructive discussion.

First asserting that, while highways and waterways are taxed "in an economic sense," these taxes are repaid through taxation from the people generally, Mr. Potter advocated application of the same principle to the railways. He suggested upward revision of rail rates in scientific fashion, and that all shippers "be charged with a part of maintaining and

paying taxes" on the national rail system as a whole, without geographic distinctions.

"The logic of Mr. Potter's article is impressive and, under the existing circumstances, very appealing," Vice-President H. N. Rodenbaugh of the Florida East Coast Railway Company comments in a letter to the MANUFACTURERS RECORD. "Its basic idea, while startling to the majority, will prove, under analysis, to rest upon a foundation of equity and fair play that has been generally ignored in the progress of transportation developments in recent years."

Since the foregoing was written Mr. Potter has further discussed the problems of the railroads. His statement will be found in this issue on page 24 and following.

Consistency!

DECISION of the cotton industry to reduce night work and to stop employing women in night operation of mills has been hailed generally as a forward step toward improved conditions for factory workers. Now, from an unexpected quarter, opposition has developed against what has been described as a humanitarian move.

According to the reported action of the National Woman's Party at its recent convention, the proposal to discontinue employing women at night has brought a protest from the women themselves against such a proceeding. They argue that to eliminate them from night factory employment is unjust discrimination and that it narrows their opportunities for earning a livelihood. This introduces a new angle to an already complicated situation.

Publicity Builds Business

Natural Bridge of Virginia, Inc.
Operating Department.

Natural Bridge, Va., December 9.

Editor Manufacturers Record:

Some three weeks ago you published a five line item in the MANUFACTURERS RECORD stating that we were planning to change our power house, and since then we have received a liberal education as to the value of advertising and the circulation of the MANUFACTURERS RECORD.

We did not know there were so many people in the world selling such equipment as we needed, and our costs for the proposed improvement have been very largely reduced, due to special offers which came to us through your fine cooperation. We cannot thank you too much.

JOHN TEMPLE, Resident Director.

The five-line item referred to in the foregoing letter is herewith reproduced:

Va., Natural Bridge—Natural Bridge of Virginia, Inc., John Temple, Resident Director, reconstructing power and heating plant; also remodeling and rebuilding properties. See Want Section—Machinery and Supplies.

This is typical of hundreds of business items which are published each week in the MANUFACTURERS RECORD and the DAILY CONSTRUCTION BULLETIN. The letter shows impressively the value of publicity as an aid in stimulation of business and reduction of costs.

Comparing Recent Textile Progress in New England and the South

AN interesting comparison of how New England industry is working to hold its place in textile manufacturing in competition with other sections of the country has been made recently. According to the American Wool and Cotton Reporter, "80 per cent of the woolen and worsted business of the United States is in New England, and 60 per cent of the dyeing, bleaching and finishing of cotton goods is in New England." The American Wool and Cotton Reporter claims that "New England cotton manufacturing now dominates the whole situation," basing its claim on the assertion that the question of costs between New England and the South has been largely settled, and that New England costs have been brought down very radically by large installations of new machinery and by stretching out of machinery.

The American Wool and Cotton Reporter picks out two or three New England textile mills which it says make a favorable comparison with some mills in the South, and states that cotton manufacturing costs, because of higher taxes, have risen in some Southern mill sections where they have spent "so much money on roads and new schools and things of that kind."

We are glad to learn that some of the mills of New England can show such a favorable record. We feel sure, however, that New England does not begrudge the advancement made by the South in the development of good roads and schools. We are glad to learn that New England cotton manufacturers have been perfecting management and improving and modernizing equipment. It is not unfair to say that any improvement, however small, would be noticeable, inasmuch as the textile industry of New England had been allowed to deteriorate to a considerable extent in recent years.

We feel sure that the South will accept New England's challenge as to cotton manufacturing supremacy. Southern cotton manufacturers long ago learned the value of modernization, and because this section has built so many new mills in recent years, the equipment is now of the latest improved design. In methods of operation, Southern mills have been leading the country and as for the stretch-out system, which is given as one reason for New England mills being able to lower production costs, certainly they can claim no monopoly in this respect as it is being followed with equal success in the South.

Granting that New England does most of the woolen and worsted business and that it retains leadership in the finishing of cotton goods, we are revealing no secret when we point out that there has been no addition to New England textile capacity in the last few years, while the South has brought in and built new mills by the score; it is fast expanding its dyeing and finishing capacity and likewise is developing textile machinery making plants which here-

tofore were confined solely to New England. While New England has abandoned hundreds of thousands of spindles in recent years, the South has added millions to its capacity and even during the last two years, expansion has continued in the South.

Instead of selecting a few of the successful mills, let us compare with the rest of the country the South's position today in cotton manufacturing. According to the latest comparable census figures, the South with more than 18,000,000 or 53 per cent of the country's total spindles in place, produced more than 8,980,000,000 square yards of cotton goods over 12 inches wide, which represented 67 per cent of the entire cotton goods output of the United States. In 1925 the proportion of goods produced in Southern mills was 62.5 per cent and in 1923 it was 57.6 per cent, indicating a steady gain. Practically all the Southern states showed an increase in spindle capacity in 1929, while New England, notably Massachusetts, continued to show a loss. In operating spindle time last year the cotton growing states reported 68,360,000,000 active spindle-hours, 68 per cent of the country's total, as compared with 28,252,000,000 active spindle-hours for New England mills. Likewise under the depression of the past several months Southern mills have continued to hold a commanding lead.

According to the monthly report for October which was issued November 20 by the Department of Commerce, there were 17,137,000 active spindles in the cotton growing states as compared with 8,092,000 active spindles in New England. In other words, during the month of October the South had 65.5 per cent of the active cotton spindles of the country. In October 11 per cent of Southern spindles were idle while in the East 39 per cent were standing still. Even more impressive is the fact that Southern mills showed 4,506,000,000 active spindle-hours, or 72.2 per cent of the country's total, as against only 1,545,000,000 spindle-hour operation in New England for October. Furthermore, the average operating time per spindle in place in Southern mills during October was 235 hours as against 115 average per spindle in place in New England.

The November report, issued December 19, shows that the South had 16,877,000 active spindles as compared with 8,048,000 for New England. Southern mills reported 4,314,236,000 active spindle hours, or an average per spindle in place of 226 hours. Active spindle hours in New England in November were 1,366,567,000 or an average of only 104 hours per spindle in place. The South, with more than double New England's active spindles, more than trebled the operation time of New England mills. North and South Carolina each showed greater spindle hour activity than the whole of New England.

It is not the success of a few mills in the section from which the American Wool and Cotton Reporter drew its conclusions, which can be used to measure an industry's activity and profitableness, but the standing of the industry as a whole. There always will be a few plants more efficiently managed and equipped, plants that can show to better advantage than the average for a particular industrial group.

Further Discussion of

Railroads' Problems

By MARK W. POTTER, New York City

AS Mr. Loree suggested in his letter published in the MANUFACTURERS RECORD of December 18, there is perhaps nothing more important for the railroads at the present time than to clear the air of sophistry. The dictionary tells us that sophistry includes "specious reasoning; subtlety, fallacious disputation; reasoning sound in appearance only, especially when designedly deceptive." Synonyms given are casuistry, chicanery, evasion, fallacy, hair-splitting, prevarication, quibbling, subterfuge and trickery. Certainly all should try to avoid these and seek to utilize the virtues of candor and accuracy. It is particularly important that this be done by those who plead alibis and make excuses for unsoundness.

The condition of the railways, the causes of their distress and the remedies to be applied, are subjects that are being discussed on every hand. The public naturally looks to railway executives to clear the atmosphere of misunderstanding and to point the way out. Others naturally are to give careful consideration to what the executives tell us. Without saying to what extent I agree or disagree with some of the alibis, excuses and explanations which are being made, I am quite willing to constitute myself a Devil's Advocate to suggest some of the things that critics might say.

FIRST: The alibi that railways are wrongfully affected and injured by unfair competition of other transportation facilities and especially the competition of inland waterways, pipelines, highways, and trucks and buses that use the highways.

It is said that highways and waterways are not taxed and are not subject to such regulation as that which is supposed to harass the railways. To remedy this supposed evil, it is being urged that motor lines be forced to pay a larger share of the cost of highways. According to the New York Times of December 18th reporting the position taken by the

Reading Company and the New York, Ontario & Western Railway Company, at a hearing now going on in this city respecting bus competition, etc., the idea among rail carrier officials is to tie the motor lines with regulation "as a means of forcing them to fix higher rates." The gist and point of the railways' contention seemingly is that through regulation of motor lines, shippers should be compelled to pay a higher rate when they use those facilities. How popular such a campaign may be with shippers is a question.

The critic might suggest that perhaps some sophistries are involved in the contentions that are being made. He might even question the correctness of the statement that highways and waterways are not taxed, and he would perhaps reason somewhat as follows: In a true sense no property is taxed. People pay the taxes and in a correct analysis the people are taxed. Looking thus at the substance of things, the people who use the highways, actually and potentially, are taxed. Perhaps the burden which bears on them under the system which applies to inland waterways and highways is even greater than the burden of rail taxation. Rail carrier taxes in many instances at least, are measured by gross receipts. The taxes which the people pay on the highways and waterways, which are the amounts that the people pay to maintain them, and pay interest on their cost, are based on the total expenditures involved in construction and maintenance. The critic would point out that when the highways and waterways are not directly taxed, the amount of what would be a natural direct tax is added to what the people pay on other things and therefore in effect the people are taxed for their highways and waterways. If this reasoning is sound, it may be possible that there is some evasion, fallacy or hair-splitting in the arguments that are being urged on behalf of the rail carriers.

Possibly the Devil's Advocate should

suggest in the interest of clearing the atmosphere that there be carefully considered the question as to whether the present system, which distributes the burden of maintaining the highways and waterways over the entire public, is not after all a sound one. The argument in this regard would run somewhat as follows: Highways and waterways are created and maintained for people who immediately use them or will use them in the future or may use them. All are benefited by their existence and properly may be charged with a part of the cost of providing and maintaining them. The costs of transportation naturally divide into two classes. There is the cost of providing the facility and maintaining it, and paying taxes on it. So far as the maintenance and tax burdens are concerned, it is just the same whether the facility is taxed directly or indirectly through taxation of the people, as in main is the present method respecting highways and waterways. There is next the cost of operating the facility. The highways are operated by motor cars, buses, trucks and horse-drawn vehicles, etc. The operating cost is paid by the user in buying gasoline, horse feed, etc. The user of the highway naturally should pay the cost of his use, and that is the present system. That part of maintenance and taxes which benefits all, potential users as well as actual users, should be distributed over all and should not be charged in its entirety to the actual users of a particular time. Such is the system that applies to highways and waterways. If the American public desire so to divide the transportation cost over highways and inland waterways with the result that those for whom the highways are maintained pay for the maintenance, and those who operate them or for whom they are operated, pay the operating cost, it would appear that they have a perfect right to adopt that system, and seemingly it is a sound system. Perhaps the critic would urge that legitimate endeavor on the

part of railroad officials should not be to change this system and blackjack shippers to pay higher rates when they use these facilities in order that shippers may be forced to go to the railways, but should endeavor to have applied to the railways a system comparable to that which applies to other facilities. The suggestion of this idea seems to be met with the charge of having a socialistic rather than an individualistic aspect. This thought brings up the question whether the endeavor should be to reform the world for the benefit of the railways, or to reform the railways for the benefit of the world. If the people have gone to a socialistic idea in dealing with the highways and waterways, perhaps the railways would be justified in having that idea applied to them. It is certain that all shippers, present and prospective, actual and potential, are interested in having efficient railway transportation maintained everywhere. All properly, as a matter of morals and economics, may be charged with a portion of the cost of maintaining such transportation. Perhaps the most important and essential facility for big business in any locality is the fact that it can ship everywhere and reach every market and every consumer throughout the nation. If this reasoning is sound, the critic would urge that there is warrant for applying to the railways the system that is applied to the highways and to waterways in order that the maintenance and tax burdens may be carried by the people everywhere for whom the railways are maintained.

Such is not the system at the present time. Under the existing order of things, the actual shippers are charged not merely with the actual costs involved in their shipments as is the case of the actual users of the highways, but are charged also with the full maintenance and tax burden of the properties on which they ship, a portion of which seemingly might properly be charged to shippers generally. A reform in this could readily be accomplished by setting aside a portion of the gross receipts of all carriers to be used to take care of the maintenance and tax burdens of all carriers. It happens that that portion of the maintenance and tax burdens which seemingly should be charged to all shippers as distinguished from that part which is affected by actual use and therefore should be charged to users, is just about 10 per cent of the carriers gross receipts. Under such a system carriers credit would be better stabilized, they would enjoy a better average prosperity, stability of labor employment would be promoted, it would be easier to adjust rates on essential commodities and progress would be made towards lower freight rates and a fair return for all. I wonder if it isn't better to candidly

and calmly discuss such a suggestion than to abruptly dismiss it as sophistry, or as socialistic?

SECOND: The alibi that regulation of railways is at fault and the Interstate Commerce Commission is to blame.

Seemingly, unless and until the carriers point to just what regulation should be eliminated, general charges of over regulation need not be answered.

A specific error of the law and of the Commission in applying its interpretation of the law is asserted in the matter of consolidations. On this subject the critic suggests the following: There is no magic in "consolidation." The word must be considered in the light of the end that is sought. That end is increased efficiency and economy. Consolidations change the form and perhaps the ownership and the amount of securities outstanding, and they change management. These changes in themselves are not important. Consolidations are warranted and are desirable only when and if they increase efficiency and promote economy. If efficiency and economy can be accomplished without consolidations, or better or more expeditiously than through consolidations, resort to consolidations need not be had. There is warrant for the belief that there is little in the promotion of efficiency and economy that can be accomplished through consolidations that cannot more easily and more speedily be accomplished by another method. That method is better cooperation among carriers without regard to carrier ownership, which will enable the carriers to make more money out of the traffic and better serve the shippers.

Commissioner Eastman, in his separate expression at the time when the Commission's complete consolidation plan was promulgated, in December, 1929, said:

"In my judgment many of the advantages which are urged in support of consolidations on a grand scale can be realized in a better way by such a policy of intelligent cooperation."

It is important and significant that Commissioner Eastman stated frankly that through intelligent cooperation the carriers could accomplish much. In the words quoted, he gave assurance of support for the carriers in intelligent effort along lines now available under the law. It would seem that Commissioner Eastman's suggestion was one which the carriers should have been alert, and should now be alert to take advantage of.

A discussion of what is possible through cooperation naturally brings to light the fact that notwithstanding the much-abused system of regulation under which the railways operate, they have in one respect a very decided advantage

over practically every other business enterprise in the country.

In the existing situation with relation to the industrially productive enterprises, there is handicap with respect to the right of industry under the law to pursue sound economic policies. If manufacturers generally were to sit down and divide territory and agree that particular commodities should be produced only at particular specified establishments; that volume of production should be reduced; and that certain industries should be shut down with permission to their owners to share in the general saving; they would promptly find themselves in trouble under the Sherman law.

Many leaders of the industrial and financial worlds are pointing to the Sherman Act as preventing the things that are essential to the restoration of prosperity and to the best service of the public interest. Manufacturing enterprises and commercial enterprises have no place to go to obtain relief from the Sherman Act. Not so with the carriers. Carriers largely are exempt from the one threat and restraint to which more than anything else industry generally ascribes its ills. That is the Sherman Act. Carriers may do what no one else may do. They may unify terminals. They may reform terminal operations and reduce terminal costs. They may enter into arrangements which will give to all carriers and to shippers the best use of facilities that best serve shippers and carriers. They may agree to handle traffic between remote important points by the lines of greatest efficiency and economy with a vast saving in transportation costs. They may divide the traffic and eliminate enormous waste of competitive solicitation. They may reduce train miles and increase tonnage per train mile and per train hour by arranging to move the traffic of the country in a way it should be moved—efficiency and economy considered—disregarding carrier ownership. They may do these things and make such arrangements among themselves as will give every carrier in the country more net earnings than are enjoyed today. They may arrange to repair equipment at most convenient points and where efficiency is best and the economy is greatest. They may designate a high-class man as the common traffic representative and adviser of all to consider plans from the standpoint of the common good. They may instruct their own traffic officials to make no rate reduction not approved by such common representative unless the president of his line decided so to do. They may jointly designate a high class transportation official to study plans for coordination and cooperation to promote efficiency and economy. They have a tribunal to go to which has full authority to pro-

fect them in the important respects mentioned against the operation of the Sherman Law. They have a national policy defined by Congress in the Transportation Act, to do these very things. It is because the carriers collectively are not doing these things that they might be open to charges of inefficiency and lack of economy and disregard of the public interests and the interests of their security holders.

There is no doubt about the savings that are possible without any material lessening of service to the public. Various situations indicate this. The Great Northern and the Northern Pacific told the Commission that they could operate their lines so as to save at least \$10,000,000 per year, simply by allowing those lines to perform their natural economic function in relation to one another and to the shippers of the country. If the St. Paul and the Union Pacific were to be brought into the picture as between Chicago and the Pacific Northwest, the annual saving perhaps would be \$20,000,000 per year or even more. The four lines serving between the Pacific Northwest and Chicago are running eight deluxe trains a day each way. Four would handle the traffic. Seemingly each line could run one instead of two without inconvenience to the public with respect to through passengers at least. Adequate service for local passengers could be economically provided. The traffic could be pooled and each one of the four carriers would make more money out of it than it is making today.

Comparable opportunities for reform and saving exist between Chicago and the Twin Cities, Chicago and Omaha and on west to San Francisco, Chicago to St. Louis and Kansas City and the Southwest, Chicago to Florida and Chicago to New York and other Eastern points.

It was thought that Mr. Brandeis, now a Justice of the Supreme Court of the United States, was going much too far some years ago when he said that the carriers could so reform their methods as to make a saving of \$1,000,000 a day. Probably one would be thought of as exaggerating if he said that anything like that is possible at the present time. However, if the statement made by the Great Northern and the Northern Pacific as to a possible saving of \$10,000,000 on their lines was justified, one would not be surprised if the carriers could save at least several hundred thousand dollars a day through the intelligent cooperation that Commissioner Eastman urges.

A critic would suggest that a brief study would show important opportunities for saving in practically every section of the United States through coop-

eration. He would suggest that from available figures and from conversations with a few railroad men, it would be developed within thirty days, and perhaps a shorter time, that enormous savings could be accomplished through cooperation resulting in reforms that could be put in over night with the consent and approval of the Interstate Commerce Commission. Until the carriers take advantage of available opportunities to reform within themselves, the Devil's Advocate would suggest that the alibi respecting consolidations should for the moment be overruled.

This brings one to the suggestion in Mr. Loree's letter:

THIRD: The alibi that management's hands are tied.

Let his statements be taken at their face value, whether we agree with them in their entirety or not. He tells us that there are about 75,000 buildings and other structures that should be abandoned; that 20,000 stations should be closed; that many thousands of miles of railroad should be abandoned and their scrap value recovered; that shops, machinery and tools need a thorough overhauling and modernization; and that the same is true of locomotives and cars; that relations with men should be put on a more satisfactory basis; that regulations unwarrantably restrict service and make jobs; that classifications arbitrarily increase pay and require duplicate payments for one service and payment for services not performed.

One must ask what management is doing to correct these ills. If as Mr. Loree says pruning is needed, why not prune? If they cannot prune independently and severally, why not try collectively and cooperatively? Management working cooperatively may abandon buildings and other structures that are not needed. Lines shown to be unjustified may be abandoned, and cooperation greatly will add to the number that should be abandoned. Cooperative management can do overhauling and repairing in existing shops that are efficient and easily arrange all needed supplements.

If regulations are wrong and labor is getting too much, is it not true that those regulations were assented to and wages were agreed to by management? Are they in effect on Mr. Loree's railroad and if they are is it not because of his approval and his agreement to apply them? If regulations and wages should be changed, who other than management should undertake this job? If Mr. Loree is right, cooperation would help him and others who entertain his view by bringing carriers into harmony of thought and policy. One of the things that many officials complain of when agreements are

made with labor is that a very few strong carriers lead off in accepting the adjustments and all others are compelled to follow. There are many of us who have enough respect for railway officials to believe that the regulations in the main are just or they would not have been accepted. If management thinks it lacks the power to make the savings as suggested by Mr. Loree, the Interstate Commerce Commission has the power to give much authority and it just happens that the Interstate Commerce Commission in its solemn public utterances is urging the carriers to make reforms. Are the hands of management so sorely tied or is management looking for an alibi?

One of the debts which the world owes the movies is for the lesson which they have taught in management and administration of important public service industries. The movies were one of the most intensely competitive industries we have ever known. Striving competitively against one another, in disregard of their common good, and of the public interest, they were facing serious adversity and were threatened with disaster. Intelligent cooperation, under competent guidance and authority, saved them and is upbuilding them. There is striking analogy and opportunity for interesting comparison between the rail carriers and the movies. The rail carriers have it in their power to prove, as have the movies, with general acquiescence, that with proper cooperation the less regulation there is the better for all concerned. Why is not better cooperation brought about? Many executives favor it. Who are blocking progress?

Washington Church Contracts

Washington, D. C.—Contract for the foundation of the south part of the new building being erected here for the National Shrine of Immaculate Conception, Catholic University, has been awarded to McCloskey & Co., Philadelphia, and for the grotto chapel to the H. W. Cord Co., Washington. Maginnis & Walsh, Boston, Mass., are the architects and Frederick V. Murphy, Washington, associate architect.

\$1,871,000 Sewer Bid

Louisville, Ky.—With a low bid of \$1,871,000 to take over the completion of the first section of the Southwestern outfall sewer, the Torson Construction Co., Long Beach, Cal., was awarded contract and is expected to begin work by January 1.

Texas Waterways

By JOHN W. CARPENTER, Dallas

President, Texas Power & Light Company, and
President, Trinity River Canal Association.

RECENT waterway developments in Texas—and they are many and important—are the red corpuscles in the life blood of the state. The tremendous possibilities involved in these developments are the tribunal before which we plead the case of Texas resources, developed and undeveloped, and measured in terms of the past, present and future.

Texas provides a vast market for much slow-moving freight, and in turn many sections are more or less dependent on Texas for grain, cotton, petroleum products and other materials, moving also by slow freight, which our resources provide for national and international consumption. Progress depends on communication and transportation. Texas is primarily an agricultural state and we realize that any saving in transportation costs of farm commodities and products will result in increased prosperity for our farmers. On the other hand, the fact that Texas imports annually about 750,000 tons of shapes, bars and plates indicates that the rest of the nation needs Texas just as badly as Texas needs the rest of the nation.

The pioneers who started Texas on its way utilized water transportation. Of late, numerous movements have sought improvement of Texas rivers to permit barge traffic, and general substantial improvement of some of the Texas streams. Discussions of flood control, water conservation for irrigation and an occasional mention of hydro-electric power have encouraged supporters of interior navigation and today in Texas there are organized movements for improvement of the Trinity, Red and Brazos rivers. Most significant in waterways development in Texas, however, is the progress being made on the Intracoastal Canal which will soon be completed into Corpus Christi. It will likely have its southern terminus at Brownsville at the Mexican border. Sections of the canal are now ready and work is progressing toward completion of this project to give Texas barge connections

with the great Mississippi River system.

Texans studying the possible advantages of the Intracoastal Canal recognize the importance of feeders for the system now approved and under construction. This recognition has inspired leaders of north and southeast Texas into a new concerted effort in behalf of the Trinity. A new governmental survey has been authorized to determine the practicability of canalization of this stream which is not new in the inland waterways system picture. Findings of the survey committee which considered the Trinity and its trade territory reveal an existing movement of 68,633,016 tons of freight by present means of transportation. It is conservatively estimated that of this amount the prospective river tonnage will be 5,301,000 tons, which is slightly more than 8 per cent of the total now available and being served by railroads of the Southwest. The average saving calculated by the committee would be \$3.10 per ton. Surely then the conservatively estimated tonnage and saving should be impressive when considering a project of this character. The total estimated saving of \$16,567,000 would support an expenditure of more than \$100,000,000 as a capital investment, if in fact such an amount of money should be necessary to canalize the Trinity.

Down in Texas we are interested in transportation problems. We recognize that transportation opens or closes markets. During the last three years Texas has provided for construction of almost 1500 miles of new rail lines to accommodate development of rich sections of the state that are just coming into recognition. Texas is steadily building more rail miles. Since its transportation demands are such, then surely it is evident that we have urgent need for early completion of inland waterways to accommodate transportation of that traffic naturally adapted to freight movement of the character provided by our present fine systems of inland waterways.

Texas has annual billion-dollar revenues from both manufacturing and agriculture. These impressive totals result

from conversion of our natural resources. The elementals of these totals cannot all be consumed locally, nor are they produced without drawing upon plants, factories and mills of areas far beyond state lines.

Six hundred miles of the Intracoastal Canal have already been authorized and 12 dredges are now opening this valuable waterway through southern Louisiana. They will soon be at work in Texas. Right-of-way has already been secured for the link between the Sabine district and Galveston. Proponents now anticipate an early request for construction bids. Much of the right-of-way has been secured for that link of 200 miles from Galveston to Corpus Christi. We shall soon see traffic from the great Mississippi Valley system terminating in Texas. The coming of the Intracoastal Canal has served to inspire those of the interior to seek direct barge connection with that important waterway. It is most certainly a reinforcement to the plea in behalf of Trinity River canalization.

The Trinity River project now presents a convincing aspect. Engineers once thought the flow inadequate, but a combination of circumstances has overcome that difficulty. Dallas and Fort Worth have recognized the necessity for adequate water supplies and today we find a chain of vast impoundings at the headwaters of the Trinity which will provide ample storage for city consumption, navigation and irrigation purposes. Combined storage facilities represent an expenditure of perhaps \$20,000,000 and provide a storage capacity of 562,440,000,000 gallons. This does not include that available from Mountain Creek Lake of 100,000 acre feet. The huge capacity affords ample storage for a city of 1,000,000 people. These facilities have been paid for by Dallas and Fort Worth to provide ample water supply and flood control. Included in consideration of these projects is irrigation of a potential 42,000 acres. With these acres under ditch, there still remains a minimum flow for the river of 239 second-feet during the most severe drought, enough for 400 daily lockings,

From an address before the National Rivers and Harbors Congress at Washington, D. C.

more than twice the estimated number necessary for movement of the present available traffic. If no water is used for irrigation, there will be a minimum flow of 319 second-feet. In making these computations, engineers estimate that 70 per cent of the domestic and industrial usage would be returned to the river in the form of purified sewage and that 40 per cent of the irrigation usage would be returned to the river. These figures are for the year 1950 and take into consideration the factors of siltage and evaporation.

Engineers estimate the expense at between \$25,000,000 and \$30,000,000, instead of \$50,000,000 if it were necessary to provide the necessary storage now or soon to be available. I again point out that our traffic survey recently completed indicates an annual saving of more than \$16,000,000, which would be a satisfactory return on a capital investment of a \$100,000,000 or even more than that.

The Trinity is not the only possibility now under consideration in Texas. Residents along the Red River are working for a gigantic dam across that stream near Denison, to afford ample flow for a nine-foot channel and create a lake with an area of 275 square miles with a capacity of 8,500,000 acre feet. Flood control, however, is the major item in this situation.

Recent authorizations by Congress provide for improvement of two established waterways that have meant much in Texas maritime commerce. Work is continuing on the Sabine-Neches channel which is being widened to accommodate a rapidly growing coastwise, ocean-going and world traffic. Provision has also been made for increasing the usefulness of the Houston Ship channel, through straightening it to facilitate movement of bottoms to and from that inland port. The last Rivers and Harbors Act provided for a 30-foot channel from Corpus Christi to Port Aransas and a 30-foot channel between the jetties at Port Aransas. Brownsville and Point Isabel are going ahead with plans for the development of a deep water port which will include a 25-foot channel to a point within four miles from Brownsville. This project is to cost approximately \$5,000,000, half of the amount to be supplied by local interests, which has been arranged.

There are several surveys pending on other proposals to extend inland waterways in Texas. The Guadalupe River, with the largest primary flow of any of the Texas streams, is receiving much consideration from those who vision navigation and hydro-electric power possibilities. The Brazos River also is receiving much thought. Flood control has brought action far inland that may

prove an adjunct in the plan, which now has a survey pending, pointing toward navigation of that stream as far inland as Richmond and Rosenberg.

Of significance in discussing present progress is the recommendation of the United States Army Engineers concerning appropriations for Texas work for the next fiscal year. This recommendation includes more than \$3,000,000 for improvement and more than \$2,500,000 for maintenance. The largest amount of improvement money would be given to the Sabine River-Corpus Christi section of the Intracoastal Canal. The Government already has expended or allotted \$6,913,000 for the construction of the canal and it will require \$14,395,000 more to complete the project in its entirety from the Mississippi to Corpus Christi.

\$8,000,000 Merchant Ship

Newport News, Va.—Sliding from the ways of the Newport News Shipbuilding and Dry Dock Co., the new \$8,000,000 merchant vessel being built here for the Dollar Line was christened President Hoover by Mrs. Hoover, wife of the President. The vessel is said to be the largest American merchantman ever built in America, measuring 653 feet in length, with a depth of 52 feet and a beam of 81 feet. She has a displacement tonnage of 33,800; gross tonnage of 23,000; deadweight of 15,800 tons, and will be provided with 67,000 cubic feet of refrigerated freight space. Provision will also be made for the accommodation of 1260 passengers of all classes and a crew of 300. A sister ship will be launched in February.

Machine Harvests Corn

THE Gleaner Combine Harvester Corp., Independence, Mo., has developed the Gleaner Baldwin Corn Combine, a machine that cuts, shells and cleans the corn in the field in a single operation, thus filling a long felt need for a powered corn harvester. The new machine cuts two rows of standing corn at a swath. These stalks and ears are conveyed to the cylinder where the corn is shelled, then to the combine separator for segregation and cleaning. This latter operation deposits the corn in the combine grain bin and puts the slightly-shredded stalks and cobs on the ground behind the machine. This residue may be plowed under, left in the field for fodder, or gathered as desired.

By this process the necessity for hand-picking the corn—an operation which

heretofore has cost from 10 to 12 cents a bushel from field to crib—is completely eliminated, the combine doing the entire job including shelling for less than four cents a bushel, say producers of the machine. In fact, a recent test in Texas showed an operation cost of 2.68 cents per bushel, or \$1.11 for harvesting an acre of standing corn, it is declared.

A desirable feature of this power farming implement is that while it is built and sold as a complete unit, the corn harvester mechanism can be attached to any Gleaner Baldwin combine. Those farmers who purchase the corn combine can obtain the wheat harvester attachment and, by a change of the cutting apparatus, convert the machine for wheat harvesting, say the manufacturers.



The Corn Is Cut, Shelled and Cleaned

Wages and Unemployment Conditions Better Than in 1921

Early in December, Robert P. Lamont, Secretary of Commerce, in a coast-to-coast broadcast arranged by the Washington Star over the Columbia Broadcasting System, presented data on some of the efforts which have been made in the past year to combat the business recession. Secretary Lamont pointed out that the country has escaped many of the painful experiences which accompanied other depressions. He said in part:

"For the first time in our entire history we have passed through a depression period without experiencing serious industrial disputes. At the end of September, the last month for which complete records are available, only 48 strikes involving less than 15,000 workers were actually in existence. During the first six months of this year only 313 disputes were recorded by the Department of Labor. In the aggregate these difficulties, most of them of a few days' duration, affected only 90,000 workers—an insignificant fraction of the more than 40,000,000 wage and salary workers of the United States. Contrast this situation with the serious labor disturbances in the 1920-21 depression. During the first six months of 1921, over 1600 or more than five times as many disputes were recorded, many of the individual strikes involving thousands and in some cases tens of thousands of workers. Approximately a million workers participated in the strikes occurring in the six-month period of 1921, eleven times as many as in the present year.

"This record of industrial peace during the trying period through which we are passing is a fine tribute to the statesmanship of our labor leaders in preventing industrial strife and to the vision of our industrial leaders in maintaining wage rates at the high levels attained in 1928 and 1929. For it is important to note that the majority of the strikes in the depression a decade ago were protests against wage cuts which were being made so extensively at that time. In the present emergency the employers of the nation, with few exceptions, have held to the understanding of last winter in wisely avoiding the penny-wise and pound-foolish policy of cutting wages

and thereby reducing purchasing power. Here again the contrast with 1921 is impressive. In the earlier depression, wage reductions were the order of the day. The Monthly Labor Review in each month of that year carried a multitude of items such as this: 'The entire force of these plants had respective wage rate decreases of 25 per cent, 18 per cent, and 16 per cent;' 'practically all laborers in this concern were reduced 17½ per cent;' '30 per cent of the men in this plant were reduced 15 per cent;' '95 per cent of the men in a second plant were reduced 14 per cent,' etc.

"What does the record show for the year 1930? In the month of September only 118 of the nearly 14,000 industrial establishments reporting to the Bureau announced wage cuts. These reductions which were of 10 per cent or less in most cases, affected the earnings of some nine to ten thousand men or less than one-third of one per cent of the total of more than 3,000,000 workers on the payrolls of reporting establishments. In August, wage reductions affecting about the same number of workers were announced, while the record for the earlier months was even more favorable, such small decreases as were made being offset or nearly offset in many instances by announcements of wage increases. Indeed, in every single month of this year, except August, some firms actually increased wages despite the declining tendency in production and profits.

"Union wage scales also have been maintained during the present year at or above the levels attained during the past few prosperous years.

"How has unskilled and unorganized labor fared in the present depression? A recent official study shows that on July 1, 1930, the average hiring or en-

trance rate actually paid to common labor in a large number of establishments in 13 important industries employing over 116,000 unskilled laborers was 43.1 cents per hour, only a few tenths of a cent less than the average for 1929 and well above the levels of 1926 and 1927. Common labor employed on Federal-aid highways, according to data published by the Bureau of Public Roads, has averaged 39 and 40 cents an hour during the first ten months of this year, a rate actually above the average paid in 1929.

"Another indication of the wholehearted cooperation of industry in the President's stabilization program is shown in the fact that working forces have been held more nearly intact in the present depression than in 1921. In the earlier period the decline of nearly 28 per cent in output of manufactured goods from the average of the preceding boom year was paralleled by a decline of nearly as large a proportion, almost 26 per cent, in employment. During the current recession, curtailment of factory output has been practically as great as in 1921, but employment has been maintained at a much higher relative level, having fallen less than 19 per cent from the high average of last year.

"Many establishments were rotating work among available employees or were utilizing their extra labor on much needed repair and maintenance work. I cannot emphasize too strongly the desirability of some such system of staggering employment so that many industrial workers now unemployed will be offered at least part-time employment during the coming winter. An even wider adoption of such measures offers the best opportunity for prompt alleviation of our present problems.

"The maintenance of wage rates virtually unchanged at the high levels of last year, the avoidance of serious industrial strife, and the relatively greater stability of employment in the present depression represents very important gains over our experience in previous depression periods, gains which are important not only for their present influence on the employment situation, but for the influence they will exert in the future."

Plans for Southern Pine Marketing

WITH the tightening of competition from other woods and from wood substitutes, and with the increasing importance of small mill production and the development of reforestation work, the Southern Pine Association, New Orleans, has entered upon an intensive study of marketing and distribution channels such as the lumber industry has not seen heretofore.

It appointed a committee on retail co-operation last July, and this committee, of which P. T. Sanderson, of Trinity, Texas, is chairman, has undertaken an ambitious program. The work is still in an embryonic stage, but progress has been made, especially in the direction of assembling facts on which must be predicated any plan designed to improve the marketing and distribution of Southern pine in local, national and international markets. There is every reason to believe, it is said, that the manufacturers and distributors of Southern pine will shortly join forces in the aggressive promotion of this product, a constructive step of far-reaching importance to the South in general, and the industry in particular.

The committee first gathered figures showing distribution of Southern pine lumber by states. One hundred and forty mills sent in reports covering shipments for the 18-month period from January 1, 1929, to June 30, 1930. These mills reported 4,898,859,000 feet shipped during the period, and the summaries, therefore, represented a true cross-section of shipments of the entire industry. Mr. Sanderson, committee chairman, said:

"The figures show that 48 per cent of Southern pine lumber shipped to the domestic trade was taken by states north of the Ohio river, and 54 per cent by the Southern tier. They also showed that the Southern markets have been increasing their dominance since 1925, an indicator of the more active building situation that has been developing in the South.

"The largest consumer of Southern pine is Texas, which took 22.4 per cent; then Illinois, 9.3 per cent; Ohio, 6.8; Louisiana, 5.7; Missouri, 5.3; Michigan, 4.9; Indiana, 4.7; Oklahoma, 4.6; Mississippi, 4.4; New York, 3.5.

"These ten states took nearly three-fourths of the total Southern pine output.

"Florida in 1925 was the second largest consumer of Southern pine, the survey shows. This was due partly to the building boom, and partly to the fact that a larger number of Florida mills were that year reporting.

"Mississippi has jumped from 20th to 9th place as a consumer of Southern pine lumber."

The study is to include the inter-state and the intra-state shipments, and the extent of criss-crossing of shipment from east of the Mississippi river to Western territory, and vice versa. Further, said Mr. Sanderson:

"The committee is also making a careful analysis of retail practices. The Southern Pine Association sent a questionnaire to retail lumber dealers throughout the eastern half of the United States, explaining what it had in view and asking for information that would help in the development of the plan. More than 3000 replies were received. The committee has been able to develop the following facts through this questionnaire:

"1. Southern pine proportion of total dealer purchases by states.

"2. Species in which various items are bought, by states.

"3. Proportion of dealer purchases made through commission men, wholesalers, and salaried salesmen.

"4. Percentage of dealer business done with various classes of trade; farmers, industrial buyers, contractors, etc.

"5. Present advertising being done, and media used by dealers, by states.

"6. Reaction of dealers and retail association officials to the plan."

With the assembling of these data, the committee has subdivided the states east of the Rockies into marketing areas; the group of producing states is the "home market," and the other groups are determined by freight rates, competition, variations in sales representation, and so on. Mr. Sanderson concludes:

"This division of the territory was made so that the committee might determine, in the light of present demand for Southern pine and the competition to be met in each of these marketing areas, as well as the suggestions of the dealers and their association officials in these respective areas, the policies that should be pursued by the Association, and the industry in each of these districts.

"The committee has now under consideration the following policies: Closer relationship with retail association; literature selling help; local newspaper and billboard advertising; exhibits and show rooms; plan service; special service to line yards; home-financing.

"Each of these subjects is being considered as a special project, and is being developed by the committee in cooperation with the retailers in the various marketing areas.

"At the same time, a program is being formulated for assisting the sales forces, both of subscribers and of retail lumber dealers. It is felt that the manufacturer sales representative should be equipped with the necessary technical knowledge, and guided in servicing the product he sells through the retail lumber dealer to

the ultimate consumer. The retail salesman can be helped through salesmanship helps and certain technical knowledge that will assist him to sell.

"An integral part of the plan is a consumer inspection service, which will be made to users of lumber through the retail lumber dealers. The extension of this service to various communities, of course, will be effected only after conferences between the Association and the retail yards in those communities. It is believed that this service should go far in the upbuilding of confidence on the part of those who use lumber, and particularly Southern pine."

Paint and Varnish Production

Shipments and deliveries of paints, varnishes, and related products by American manufacturers last year totaled \$549,581,059, an increase of 4.3 per cent as compared with \$527,109,077 reported for 1927, the last preceding Census of Manufactures year.

Last year's production total shows that establishments engaged primarily in the manufacture of paint and varnish and related products contributed \$521,550,539 and establishments engaged chiefly in other lines of manufacture contributed \$28,030,520. These totals were computed on f. o. b. factory price figures.

The 1929 output was as follows: Pigments or colors (for sale), 1,663,767,240 pounds, valued at \$100,264,969; paints, \$226,267,681; varnishes, japans, and lacquers, \$201,834,065; stains, fillers, putty, and bleached shellac, \$21,214,344. The paint output comprised the following: Paints in paste form, 398,766,822 pounds, \$47,178,759; mixed paints, ready for use, 102,255,301 gallons, \$172,089,567; water paints and kalsomines, dry and in paste form, 152,326,005 pounds, \$6,999,355.

The number of establishments engaged primarily in production of paint and varnish last year totaled 1,036, as compared with 1,006 reporting for 1927, an increase of 3 per cent. Those establishments gave employment to an average of 28,894 wage earners, as against an average of 28,061 in 1927, an increase of 3 per cent, and the wages paid totaled \$41,824,559, compared with \$40,184,732 in the preceding census year, an increase of 4.1 per cent.

Cost of materials purchased by the industry last year amounted to \$330,703,102, an increase of 7.5 per cent over the 1927 total of \$307,724,370, while the value added by manufacture totaled \$232,328,388, an increase of 19.4 per cent over the \$211,285,472 total of 1927.

Another Great Southern Highway Planned

By MAURICE H. THATCHER,

Representative in Congress from Kentucky

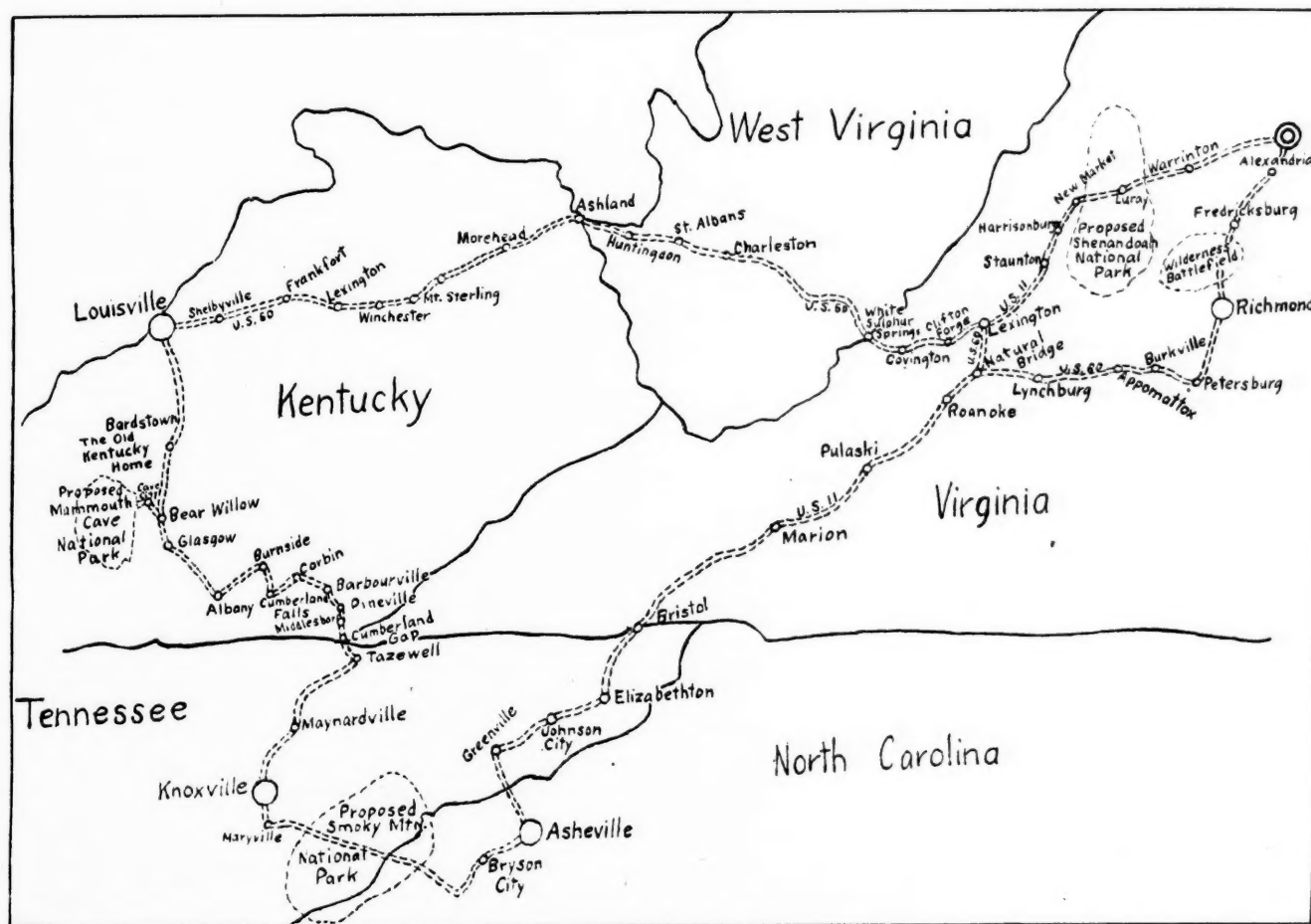
NOT only is this the era of good roads in general, it is the era of good roads in the South in particular. Not only does the South need such roads for intra-area service, but also the East and North and West fairly clamor for good roads in the South for use by the ever-growing number of visitors from those sections. The arguments in advocacy of good roads are too well known even for recapitulation.

So it is that I have suggested the formal selection and proper designation of an Eastern National Park-to-Park

Highway, to stretch between, say Mammoth Cave National Park in Kentucky and Natural Bridge, Virginia, with easy continuation to Washington, D. C., on the east and Louisville on the west. Two highways, one well to the north of the other, thus would provide a loop from Mammoth Cave through Louisville and eastward to Lexington, Va., to Natural Bridge, Va., and back to Mammoth Cave by way of Virginia, North Carolina and Tennessee points. The loop may be enlarged by passing through Lexington to Washington and returning

over another road from the national capital to Natural Bridge. In detail, these routes would run as follows:

Mammoth Cave via Glasgow, Burkesville, Albany, Monticello to Cumberland Falls and Corbin; then to Middlesboro, Cumberland Gap and Knoxville; then through the Great Smoky Mountains National Park to Asheville; then northward via Greenville, Tennessee to Bristol; then by Roanoke, Natural Bridge, Lexington and Staunton, to the Shenandoah National Park in Virginia; then describing a loop via Washington, the nation's capital, and southward and westward; Richmond, Petersburg,



Showing Route of Proposed National Park-to-Park Highway

Burkesville and Appomattox to Natural Bridge, and then once again over the short distance from Natural Bridge to Lexington, Va.; then continuing westward over the Midland Trail, United States No. 60 (which would be entered upon at Burkesville, Va.), via Charleston and Huntington, W. Va., to Ashland, Lexington, Frankfort to Louisville; then southward over the Jackson Highway, via Bardstown and the Lincoln Farm, to the Mammoth Cave region, the point of beginning.

In the near future, I plan to call a meeting of interested persons and organizations, in an endeavor to obtain general agreement on the projected highway. The importance of this highway hardly can be over-estimated. It will open to the entire country these three great national parks east of the Mississippi River and will be of tremendous value to the South and to all other sections. This highway, as I recently pointed out in the Louisville Herald-Post, not only would connect three great national park areas, but also would traverse for the most part very picturesque and historic points of our Southern and Eastern country.

The loop from the Shenandoah National Park to Washington, and thence via Fredericksburg, Richmond, Petersburg and Appomattox to Natural Bridge is suggested for the reason that it is believed that the greater number of tourists who would travel this park-to-park highway would also desire to see the Nation's Capitol and some of the more outstanding historic points in the Old Dominion. Other loops could be added if the respective States involved should so desire, and should provide adequate highway improvement therefor. These loops could be included by tourists at their option as a part of their Eastern National Park-to-Park trips.

If and when this park-to-park highway is established, troops of automobiles will visit the three national parks in tour, and the innumerable scenic and historic attractions along the way. A vacation of three or four weeks could not be more delightfully or profitably spent than by negotiating, by motor, this great highway and the three wonderful national parks which lie at the three points of an irregular triangle. The entire highway, if the Washington-Richmond-Appomattox loop is included, will constitute a rough figure 8, and will be a little more than 1800 miles in length. The distance from the Mammoth Cave National Park will be about 300 miles; from the Great Smokies National Park to the Shenandoah National Park about 500 miles, and from the Shenandoah National Park to the Mammoth Cave National Park about 500 miles. These figures are given roughly. The Washington-Richmond-Appomattox loop will add nearly 400 miles.

The three national parks in question

should be under the National Park service within the next two years, and open to the public as national parks. Hence, no time should be lost in the work of designating and improving this park-to-park highway. The Wilderness road and Midland trail will constitute portions of it. It will pass through Cumberland Gap and other great historic points. The mere suggestion of these facts is sufficient. Think of the patriotic value of such a roadway to our people. That value will be even greater than will be the commercial benefit to the States traversed by this highway. Young and old will profit by the contact.

Our country will have no finer asset than this system of national parks east of the Mississippi and this great historic and scenic roadway to render these parks properly available.

Barracks for Langley Field

Hampton, Va.—Bids will be opened January 15 in the office of Captain George H. Schumacher, Constructing Quartermaster, Fort Monroe, to erect one 163-men barracks, two 200-men barracks and one 300-men barracks at Langley Field.

Census Wood Preserving

THE Bureau of the Census announces that establishments engaged primarily in wood preserving in 1929 reported production and receipts as follows: Value of treated products owned by establishments reporting, \$116,578,000; estimated value before treatment of forest products treated but not owned by establishments reporting, \$49,929,000; amount received for treating materials owned by others, \$23,261,000; value of other products, \$399,000; making a total of \$190,167,000, an increase of 3 per cent as compared with \$184,557,640 reported for 1927.

This industry as defined for census purposes embraces establishments engaged wholly or principally in treating wood with creosote, zinc chloride, or

other preservatives to prevent decay and for protection against insects.

Statistics for 1929 are summarized in the accompanying tables, with comparative figures for 1927.

As the purpose of this preliminary report is to make the census statistics available at the earliest possible date, insuring maximum current value, they have been compiled from returns which have not received the careful scrutiny and revision which will be given before publication of the final reports, the Bureau reports. For this reason, some of the items in this report may differ appreciably from the corresponding items in the final report for the industry, but it is believed that these differences are not of sufficient importance to have any material effect on the value of the statistics for practical purposes.

SUMMARY FOR THE INDUSTRY: 1929 AND 1927

	1929	1927	Per cent of increase or decrease (—)
Number of establishments.....	196	193	1.6
Wage earners (average for the year)....	12,971	12,259	5.8
Wages*	\$14,857,000	\$13,725,557	8.2
Cost of materials, fuel and purchased electric current*	\$146,122,000	\$141,554,898	3.2
Products, total value†	\$190,167,000	\$184,557,640	3.0
Forest products treated, total.....	\$189,768,000	\$183,648,327	3.3
Other products	\$399,000	\$909,313	—56.1
Value added by manufacture†	\$44,045,000	\$43,002,742	2.4

*Manufacturers' profits can not be calculated from the census figures because no data are collected for certain expense items, such as interest on investment, rent, depreciation, taxes, insurance and advertising.

†Value of products less cost of materials, fuel and purchased electric current.

FOREST PRODUCTS TREATED WITH PRESERVATIVES. VALUE BY OWNERSHIP: 1929 AND 1927

	1929	1927	Per cent of increase or decrease (—)
Forest products, treated, total.....	\$189,768,000	\$183,648,327	3.3
Forest products owned by establishments reported, selling value after treatment	\$116,578,000	\$113,194,606	3.0
Forest products not owned:			
Estimated value before treatment	\$49,929,000	\$44,550,760	12.1
Amount received for treatment..	\$23,261,000	\$25,902,961	—10.2

Marine Power Plant

for Land Service

THE first successful conversion of a ship into a floating power plant for shore service has been accomplished in the steamer *Jacona* by the Newport News Shipbuilding and Dry Dock Company for the New England Public Service Company of Augusta, Maine. The vessel was purchased by its present owners from the United States Shipping Board, and has been turned into a plant capable of generating 20,000 kilowatts to be used in utilities on land.

The equipment consists of four boilers, which will furnish steam for two turbo-generators, each rated at 10,000 kilowatts, and fills practically all the original cargo and machinery spaces. In addition to the boilers, the following auxiliaries are installed in this space: Two motor-driven boiler feed pumps, one turbine-driven boiler feed pump, two fuel oil service pumps, three fuel oil heaters, one fuel oil transfer pump and one bilge pump, besides numerous meters and gauges. The boiler equipment consists of four Babcock and Wilcox marine type boilers, equipped with air preheaters, interdeck superheaters and Diamond soot blowers. These boilers deliver 280,000 pounds of steam per hour at 425 pounds pressure and 250 degrees F. superheat. Each is equipped with 11 Babcock and Wilcox Cuyama burners. The fuel oil is supplied to the

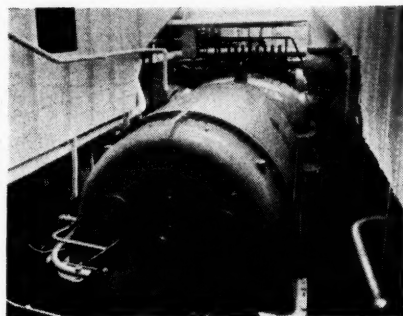
burners at approximately 300 pounds pressure and 300 degrees temperature. Auxiliary steam is taken from two of the boilers through desuperheating coils, to heat the fuel oil and operate the steam driven auxiliaries. The furnace walls consist of a high grade fire brick and special insulation.

Near the center of the ship, between the boiler and engine rooms, are four built-in steel fuel oil tanks, having a total capacity of approximately 900 tons of fuel oil, or enough to supply the plant about five days at full capacity. On the second deck level are two high pressure feed water heaters and a surge tank, which is in the boiler feed suction line. A dividing bulkhead has been removed and this space is occupied by

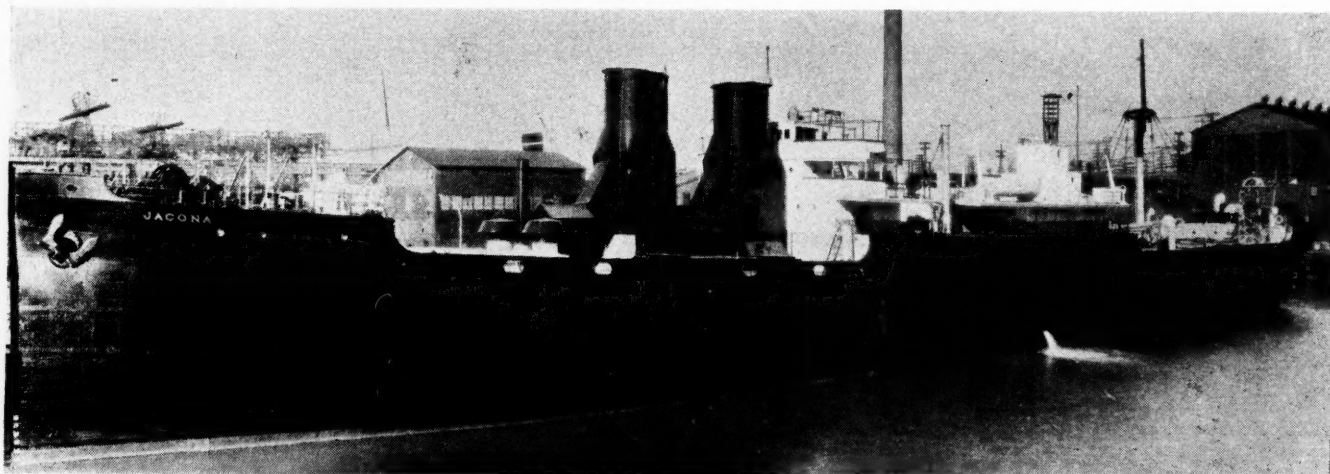
one of the 10,000 kilowatt turbo-generator sets with its auxiliaries. A cargo space is occupied by the second 10,000 kilowatt turbo-generator set with its auxiliaries. Another cargo space near the stern constitutes the switchboard room. Switching equipment is located on the second deck and a bank of station service transformers is mounted below.

The turbines are General Electric standard powerhouse machines of latest design and high efficiency. They operate at 3600 r. p. m. on 400 pounds steam pressure and 250 degrees superheat, exhausting into a Westinghouse surface condenser at one inch absolute back pressure. With these steam conditions, steam consumption of the turbine alone is approximately 9.4 pounds per kilowatt at full load. The condensing equipment was furnished by the Westinghouse Electric and Manufacturing Company. Condensers are of the single pass type and the tubes are expanded at both ends. Each condenser is located under the turbine which it serves and is suspended from the turbine exhaust flange. Distilled water will normally be used for make-up feed, thus avoiding deposits of scale in the boilers.

The generators are built either for 11,000 volts "Y" or 6,600 volts delta. Leads are brought out from each wind-



Forward Generator Room



Jacona, at Pier of Newport News Shipbuilding and Dry Dock Co.

ing and carried to the Allis-Chalmers Reyrolle oil circuit breaker units where the change-over can be made from 11,000 volts to 6600 volts or the reverse, through a plug type carriage. The switchboard equipment is the General Electric commercial type, treated for marine installation.

The method of making electric connections to the shore consists of a steel tower on the dock and one on the port side of the ship, built on the main deck.

Arrangement has been made to transfer this tower to the opposite side where necessary. Two separate three-phase circuits, consisting of heavily armored and insulated cable, will run up these towers and over a barrel cross-arm structure to the dock tower. Slack is left to compensate for a rise and fall of 10 to 18 feet in the tide.

Conversion of the Jacona into a floating powerhouse illustrates the adaptability of ships for this type of plant.

\$500,000 Hotel Projected

St. Joseph, Mo.—Plans are being advanced by the Atlas Realty Co., Henry Hesse, president, for building a \$500,000 hotel here to be operated by the Lincoln Arms Hotel Co. Denis Flynn, secretary of the Atlas organization, has opened temporary offices in the Building Industry Club and will handle promotional details. Ellis Charles, Wichita, Kans., is the architect.

Truck-Trailer Poultry Express

A White-truck and Fruehauf-trailer combination for long distance transportation of poultry and livestock is being operated by the National Poultry Express, of which Louis Cohen, Louisville, Ky., is the owner. It embodies a number of interesting features, including an automatic feeding and watering system, and an electric generating system for illumination. About 10,000 pounds of live poultry comprise a load.

A structure of angle irons and wire mesh is built on the trailer. Trays and feeders can be stacked on the top gear, permitting utilization of the space for any type of freight, particularly on return trips. Lugs provide for adjustment of the height of various compartments from that required for spring chickens to that needed for turkeys. Provision is made also for a heavy iron double-deck to permit transportation of calves, hogs and sheep.

The automatic feeder consists of a tank within which feed is mixed with

water, then forced by motor driven pumps into feeding troughs, these comprising division walls between the various compartments. An electric generating system furnishes power for illumination for night feeding. Ultra-violet ray

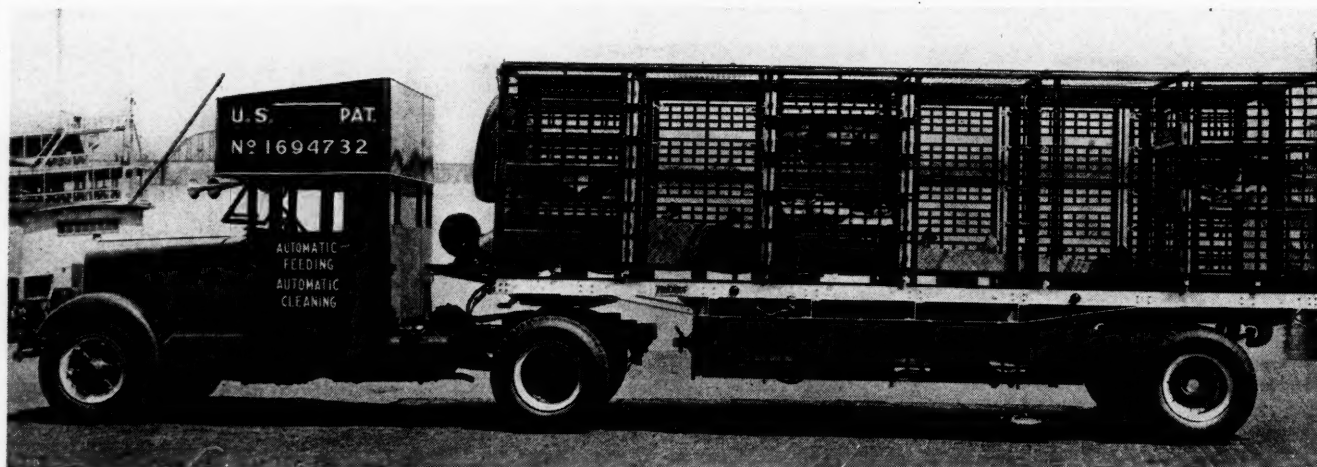
equipment provides for health treatment and for the warmth of fowls. An electrically driven air blower installed on the front of the trailer provides for cooling in hot weather.

A platform carried beneath the trailer opposite the feed mixing tank is used for loading and unloading operations. The locking arrangement is a system of straight bars over removable doors, and angle irons over the troughs fit into pockets at the top and locked-on staples below. During heavy rains and in cold weather these locked irons provide also for an air space between the tarpaulin and the truck. The top of the poultry compartment is hinged sectionally and opens to permit loading.

During the past two months the truck has carried loads into Indiana and Illinois and as far as Iowa. The owner plans to establish an extensive poultry truck-trailer express system and may also operate refrigerated trucks and trailers.



Rear View of the Trailer



In This Trailer and Truck Combination Live Poultry Is Shipped Long Distances in Quick Time. Beneath the Trailer Is a Loading Platform

Economic Progress in Kentucky

By JAMES W. MARTIN

Director, Bureau of Business Research
University of Kentucky, Lexington

IN discussing the economic progress of Kentucky, I may present the situation most effectively by showing the tendencies over the past 10 or 15 years in comparison with trends apparent in other parts of the South and in other parts of the country. To this end, I shall offer data on the economic situation which will present the picture as clearly as possible on the relative agricultural, business, mining and manufacturing positions.

Since 1919 Kentucky has enjoyed more rapid growth of manufacturing than the states as a whole outside the South, and even has run somewhat ahead of the South considered as an individual area, although North Carolina has experienced decidedly more rapid growth. The University of Kentucky Bureau of Business Research uses a new index of manufacturing which it has constructed, to take direct account of the amount of product without considerable reflection of price changes. Information for 1921 is not shown, as primary horsepower was not reported in the census for that year.

Prior to 1919 Kentucky had suffered an actual decline in manufacturing, due mainly to the demolition of its native forests and especially to the abolition of the legal manufacture of distilled liquors for the open market since the two previous censuses. Of significance also is the fact that Kentucky manufacturing appears to be less injured by depression than industry in many other states, particularly those to the north and west as a group.

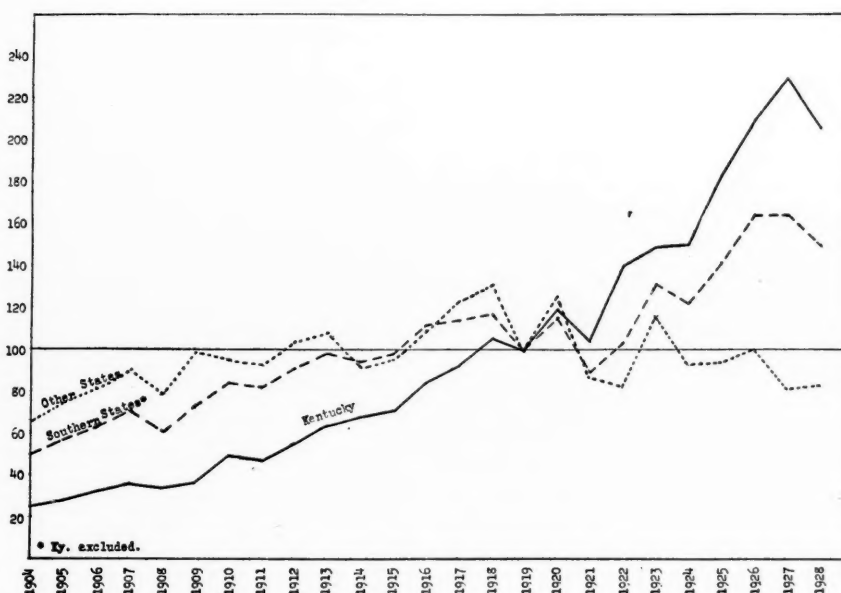
This is shown by analysis of the statistics of 1921 in particular, which unfortunately cannot be included here on the same basis as data for other years. In 1921 as compared with 1919, for example, the average number of wage earners employed in manufacturing was re-

duced in Kentucky less than in any other Southern state except North and South Carolina, and less than in any state outside the South except Wyoming. There was also relatively little reduction in Kentucky in the total wage bill and the total value added by manufacture. If the history of 1921 is of any significance, therefore, it may be estimated that the current depression is interfering less with Kentucky manufacturing than it is with industrial progress of the country as a whole. This surmise is borne out also by the information available in the offices of the chief labor inspector of Kentucky and of the Associated Industries, as compared with reports coming from other states and from the research agencies observing the entire country. It may be remarked, incidentally, that manufacturing in Kentucky shows a tendency to concentrate along the Ohio River.

As to the relative mining position of Kentucky, the most important mineral

product of the state is bituminous coal. Aside from the slight recessions after the 1907 panic and the 1921 depression, Kentucky has consistently gained in output of coal throughout the century until 1928. Generally speaking, the situation in the other coal areas of the South has been the same, except that a larger number of fluctuations have occurred elsewhere than in Kentucky. In the North, the fluctuations have been numerous and pronounced, especially for the past 20 years, and a decline has set in since the World War. In general, then, Kentucky has succeeded in maintaining a satisfactory relative position in this fluctuating industry and there seems little if any reason to believe that eastern Kentucky in particular will suffer unduly. Indeed the history of the past several years leads one to expect that that field will fare better than any other except possibly the extension of it to be found in West Virginia.

Bank debits to individual accounts,



Bituminous Coal Production, Kentucky, Compared With Other States, 1904-1928

Extracts from an address before the Southeastern Economics Association. Mr. Martin acknowledges assistance from the staff of the Bureau of Business Research, College of Commerce, University of Kentucky.

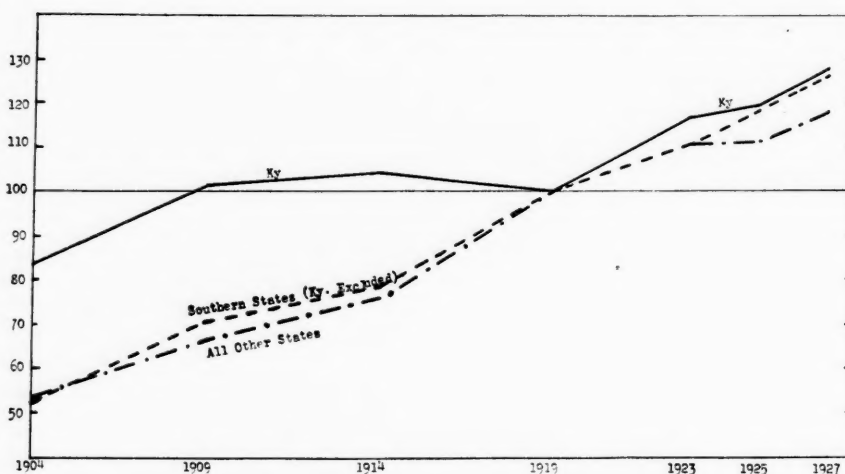
statisticians say, constitute one of the best measures of general business activity. On the basis of the index numbers used, it is apparent that Kentucky general business activity was more hindered by the 1921 depression than either the Southern group or other groups of states. On the other hand, Kentucky has shown great increase over the 11 years. Unfortunately a great deal of the increase in business activity in Kentucky is not reflected in bank debits, since nearly all the eastern coal trade—the most rapidly growing large business in the state—is carried on from smaller towns, thus largely failing to register in the banking activity of reporting cities. In some degree, the same may be true of increases in the textile trade in other Southern states.

The trend of the agricultural situation of Kentucky over the past six years has been slightly more favorable, in terms of farm value of crops and livestock combined, than in some states, although possibly less favorable than in the states to the north and west as a group. The Kentucky situation might have been more enviable had the burley tobacco farmers in the central section of the state not raised so large a crop as to

drive down the state average price very substantially. Had the measuring stick used in the agricultural comparisons been gross income, which the United States Bureau of Agricultural Economics defines as the cash receipts from crops and animal products sold, plus home-grown products consumed by farm families, the showing of Kentucky would

have been better. The drought may be expected to affect the showing for Kentucky agriculture of 1930, just as it will affect the showing of many other states.

It is clear that current economic progress in Kentucky is very gratifying, especially under various unhappy conditions prevalent in the United States and in the rest of the world.



Growth of Manufacturing in Kentucky Compared With Groups of Other States, 1904-1927

\$746,000,000 in Pig Iron

TOTAL production of pig iron and ferro-alloys in blast furnaces last year amounted to 42,334,284 tons valued at \$746,290,744, representing increases of 16.8 per cent and 8.4 per cent, respectively, as compared with 36,230,420 tons valued at \$688,641,808, reported for 1927, the last preceding Census of Manufactures year.

Last year's output was made up as follows: 32,582,807 tons of pig iron and ferro-alloys, with an assigned value of \$547,762,157, made in blast furnaces and consumed in steel works and rolling mills and foundries under the same ownership as the blast furnaces; and 9,751,477 tons, valued at \$198,528,587, produced for sale.

In addition, 220,387 tons of ferro-alloys valued at \$28,655,447 were produced in electric furnaces; this output represents increases of 25 per cent and 68.1 per cent, respectively, as compared with 176,272 tons valued at \$17,049,050, reported for 1927.

Total production of ferro-alloys in 1929, both in blast furnaces and in elec-

tric furnaces, amounted to 868,519 tons valued at \$69,986,850, as against 678,324 tons valued at \$50,556,637, reported for 1927, rates of increase being 27.9 per cent and 38.4 per cent, respectively.

Entire production of the 103 establishments in this industry last year totaled \$773,098,818 in value as compared with \$708,904,238, the value of production of

116 establishments in 1927, an increase of 9.1 per cent. Blast-furnace products amounted to \$767,745,506 as against \$706,447,979 in the earlier year, an increase of 8.7 per cent, while the value of other products and receipts from the sale of electric current totaled \$5,353,312 as compared with \$2,456,259, an increase of 117.9 per cent.

SUMMARY FOR THE INDUSTRY: 1929 AND 1927

	1929	1927	Per cent of increase or decrease (—)
Number of establishments.....	103	116	—11.2
Wage earners (average for the year).....	26,296	27,958	—5.9
Wages.....	\$43,025,614	\$44,258,499	—2.8
Cost of materials, fuel and purchased electric current.....	\$607,858,298	\$579,555,036	...
Products, total value.....	\$773,098,818	\$708,904,238	9.1
Blast-furnace products.....	\$767,745,506	\$706,447,979	8.7
Other products, value and receipts from sale of electric current.....	\$5,353,312	\$2,456,259	117.9
Value added by manufacture.....	\$165,240,520	\$129,349,202	...

PIG IRON AND FERRO-ALLOYS CLASSIFIED BY GRADE

	1929 Tons	1927 Tons
Basic.....	24,965,311	20,163,521
Bessemer.....	9,448,783	7,906,669
Foundry.....	4,336,516	5,380,296
Malleable.....	2,347,078	1,757,382
Low-phosphorus.....	368,051	361,954
Forge or mill.....	142,044	144,558
White, mottled and miscellaneous.....	39,429	481,141
Ferro-alloys, made in blast furnaces.....	648,132	...
Direct castings, made in blast furnaces.....	38,940	34,899
Total.....	42,334,284	36,230,420

New Natural Gas Products

Possible utilization of enormous quantities of natural gas now wasted in many fields, for the production of numerous valuable chemical products, is under consideration by the Federal Bureau of Mines. Oil production in new fields is usually accompanied by large quantities of natural gas, and as markets are not available at the time, much of this gas is wasted by being blown into the air. Chemical products, it is thought, may be devised to utilize this waste and thus add huge sums to the income of the South, where natural gas abounds in a wide area. Production in the South in 1927, the latest available figures, ran to 166,528,200,000 cubic feet, or 68 per cent of the country's supply. Natural gas gasoline in the South totaled 58,152,000 gallons, or 62 per cent of the national output for 1927. The South also produces many other articles with which the new natural gas chemical products could be blended with profit.

Recently there has been much interest in the hydrogenation of oils, Harold M. Smith of the Bureau explains. An important method of obtaining the necessary hydrogen has been devised, for use as a reducing agent in the process industries; in the hydrogenation of mineral and vegetable oils and coal; in the synthetic production of ammonia, which is widely used as a refrigerant and in the manufacture of fertilizer.

Methane can be treated to give a mixture containing one volume of carbon monoxide and three volumes of hydrogen, which is the basis for several catalytic syntheses. Under certain operations water gas yields methanol (methyl or wood alcohol). Methanol is used widely as a solvent, a denaturant, and an organic intermediate in the formation of other compounds. At atmospheric pressure in the presence of iron or cobalt catalysts many compounds may be formed, among them liquid hydrocarbons and oxygenated compounds which could be blended with gasoline. Acetone, a valuable solvent and intermediate for nitrocellulose lacquers and explosives may be obtained by a similar process. Methane also can be oxidized directly by oxygen, or oxygen-containing gases to formaldehyde and other oxygenated products. Formaldehyde has become important in the synthesis of resins, such as bakelite, and also is a valuable antiseptic.

By pyrolysis methods hydrogen may

also be obtained. Other gases formed in the pyrolysis of natural gas are acetylene, butadiene, ethylene, propylene and butylene. Acetylene is used in welding and cutting metal and may be used to prepare acetaldehyde, which is further used in silvering mirrors or in the preparation of medicinals, such as chloral, a soporific. Butadiene under proper treatment condenses to form an artificial rubber having the same general composition as natural rubber. Ethylene has recently come into use in ripening fruits. It is also finding use as an anesthetic. Its major use at present is in the synthesis of ethylene glycol, an anti-freeze for water-cooled motors. Ethylene is also the basis for a series of important lacquer solvents. If desired, ethyl alcohol, widely used as a solvent and also in the preparation of other compounds such as ether, may be prepared from ethylene.

Again, by the proper reaction with chlorine, ethylene chloride is formed. This is a valuable solvent, especially for fats and essential oils, and is also used as an anesthetic. Propylene finds use as an anesthetic, and also in the synthesis of isopropyl alcohol, which is being substituted for ethyl alcohol with good results in certain instances. Butylene is also used in the preparation of certain butyl alcohols which are used as solvents in the chemical industries.

The principal liquids formed in the pyrolysis of hydrocarbon gases are benzene, toluene and xylene. Benzene is a valuable product and forms the basis of many chemical processes. Thus are obtained aniline and the entire series of aniline dyes, and many explosives, perfumes and medicinals. In addition, benzene is an excellent solvent and anti-knock motor fuel. Toluene is the basis of the familiar T.N.T. (trinitritoluol), of dyes, and of saccharin, a sugar substitute 400 times as sweet as sugar. Xylene is similarly used in the synthesis of dyes and other products, and also to a large extent as a solvent.

Solids resulting from pyrolysis are chiefly naphthalene and anthracene. Naphthalene is well known as an insecticide in the form of moth balls. It is also the basis for the important indigo dyes. Anthracene is used in the synthesis of alizarin dyestuffs. Finally, under certain conditions of cracking carbon black is obtained; it is widely used in making ink, compounding rubber and as a pigment for paint.

Chlorination is generally applied to methane, although the other gases may be chlorinated. From methane four products may be made: Methyl chloride, much used as a refrigerant; methylene chloride, a solvent; chloroform, a general anesthetic, solvent, and intermediate in the formation of other compounds; carbon tetrachloride, a solvent, used in fire extinguishers and medicinally in combating the hook worm.

Even if the technical difficulties attendant on the commercial production of the various products mentioned are solved, the Bureau feels that the economic side of the problem should receive serious consideration. Since, however, the raw material under consideration is virtually a waste product, any return, however small, would be profitable and an aid to conservation of natural resources. Moreover, it has happened many times in the development of the chemical industries that the large production of a chemical product at an attractive price has stimulated its use. For example, benzene, which at present is too high in price for widespread use as an anti-knock medium in motor fuel, would undoubtedly be attractive to many refiners if available at a more moderate cost. Finally, most of these processes, while they may appear simple on paper, probably will not be ready for general use for several years, as there are many technical difficulties to be solved before commercial application is feasible.

Paper Box Census

The Bureau of the Census reports that the total value of products shipped or delivered in 1929 by establishments in the United States engaged primarily in manufacture of boxes and other containers made of paper and paper board amounted to \$294,657,000, a decrease of 3.9 per cent as compared with \$306,555,062 reported for 1927, the last preceding census year. The total for 1929 is made up as follows: Corrugated shipping containers, \$79,280,000; solid-fiber shipping containers, \$28,246,000; cartons and folding boxes, \$68,885,000; set-up paper boxes, \$83,741,000; paper cans, \$11,403,000; decorated, lithographed, lacquered, and fancy covered boxes, \$5,354,000; other boxes, and boxes and containers not reported by kind, \$3,374,000; products, other than boxes, \$14,374,000.

Turns *from* One-Crop System

By LOVELACE EVE, Augusta, Ga.

Mr. Eve, long associated with Georgia journalism, wrote the accompanying article while in charge of the Bureau of Statistics of the Georgia Department of Agriculture. On December 14 he became publisher of the Augusta Chronicle

GEORGIA agriculture today is more wisely and widely diversified and Georgia farms, taken as a whole, are more nearly on a sound production basis than at any other period in its history. The state has passed through the dark period, reaching roughly from 1920 to 1925, when 62,000 farms were deserted, and is now reinhabiting or re-locating many of these so called "lost"

tion of cotton, for ginnings have run well over 1,000,000 bales during the past six years and the 1930 crop will exceed 1,500,000 bales, according to present estimates.

In 1924, the average annual income

cotton production have been planted to tobacco, peanuts, truck and fruits. In 1919, the state produced 14,310,000 pounds of tobacco and this year Georgia farmers marketed 103,305,000 pounds. During the last 10 years, Georgia peach growers shipped out of the state an average of 10,430 cars of peaches each year. The average annual shipment of Georgia watermelons for the past 10



Poultry Raising Is a Profitable Activity for the Farmers of Georgia



Bright Leaf Tobacco in Lowndes County, Ga.



Farmers Bring Large Quantities of Peppers to a Plant at Pomona, Ga.

farms. From 1925 to 1930, more than 8000 of these farms were put back into production.

During the ten years 1911 to 1920, an average of 5,338,000 acres a year was planted in cotton, but from 1921 to 1930, cotton acreage decreased to an annual average of 3,761,000 acres. Yet this drastic reduction in acreage did not materially reduce the state's produc-

per farm in Georgia was \$1,121, and in 1929 it had increased to \$1,360, further proof that wise diversification has had its part in overcoming the disastrous economical effects suffered during the years 1920 to 1925. Lands taken out of

years has been 16,300 cars, with shipments this year of 25,000 cars or more.

Other major items that figure largely in the state's program of diversification are cane and sorghum syrup. Last year, Georgia farms produced 7,230,000 gallons of syrup, as compared with 4,375,000 gallons in 1925. The 1929 sweet potato crop reached 11,780,000 bushels, more than doubling the 1925 crop of 5,-



Threshing Peanuts in Lowndes County, Georgia

170,000 bushels. In 1925, there was harvested 132,050,000 pounds of peanuts, and last year's harvest reached 222,950,000 pounds. The Georgia farmer now is seriously turning his attention to livestock and livestock products as a profitable means of adding to his income, and a long step forward is being taken in

Realizing the necessity of again placing agriculture on a profitable basis, almost every line of endeavor has set its shoulder to the wheel, particularly the railroads in the state. Practically all these roads maintain agricultural departments, co-operating with the State Department of Agriculture, the State

demonstrations have resulted in a 20 per cent increase in acreage planted to these crops in 1929 in the territory served by these roads. E. S. Center, Jr., general agricultural agent, says:

"Our department has aided every movement for the advancement of the livestock industry, cooperating in the



Hereford Herd Beef Cattle, Owned by Cummings & Son, Donaldsonville, Ga.

the discard of scrub stock for pure-bred poultry, hogs and cattle. From these sources the farmer is deriving a yearly cash income, through the sale of livestock and livestock products, of nearly \$35,000,000.

Much is said of the major items in the diversified program, but little is known of the many smaller factors, which added together are reaching gigantic totals. One of the recent developments is that of beekeeping and the sale of honey, from which over \$1-

College of Agriculture, the experiment stations and county agents, and are conducting actual field demonstrations on large scales, aiding in financing and directing educational programs on the farms and in the schools, as well as aiding in securing pure-bred poultry and livestock for those farmers desiring to get away from the "scrubs" of the past.

establishment of permanent pastures, increased production of feed crops and the use of pure-bred bulls. Due largely to our activities, dairying has taken a firm hold and continues to show a certain increase. Also, poultry pick-up cars are operated throughout the year, resulting in a large increase in poultry and egg production and producing a steady month-to-month cash income for our farmers. Community hog sales are conducted in like manner, and co-operative cream shipping stations provide a cash market for the many owners of small herds along our lines.

"Each year our railroads award



Pecans Ready for Shipment from National Pecan Growers Exchange, Albany, Ga.



A 35-Year Old Planting of Loblolly Pine

000,000 a year is added to the income of the Georgia farmer. More or less as a sideline, he is selling \$250,000 worth of goats and kids each year. Shrimp, oysters and fish add \$1,250,000, to list only a few minor items.

The establishment of farmers' markets in the large cities of the state has opened a vast retail market for fruits, vegetables, home-canned fruits and vegetables, chickens, eggs and smoke-house products. Such a market in Atlanta has created annual sales of more than \$500,000.

The Atlanta and West Point Railroad, the Western Railway of Alabama and the Georgia Railroad, through their agricultural departments, for several years have been conducting soil-building demonstrations with winter legumes. Records show that the use of hairy vetch and Austrian winter peas has greatly increased yields of various crops, and

several scholarships to prepare boys and girls for a more successful future in agriculture and its allied lines, and our field representatives aid farmers in solving their many perplexing problems of marketing, as well as production. We are constantly promoting better forestry practices and are advocating reforestation of abandoned farm lands, assisting in locating markets for timber, and promoting co-operative shipment of timber to distant markets for veneer and other special uses."

Thousands of acres which formerly produced less than half a bale of cotton per acre and less than 15 bushels of



Demonstration Farm, Hairy Vetch and Austrian Peas, in Campbell County, Ga.

corn to the acre, are now producing a bale of cotton and 40 bushels of corn, because farmers now are following modern farm methods, using better seed, high grade fertilizer and following a wise plan of diversification. The section of Georgia served by the three railroads mentioned is typical of the state as a whole. The foregoing gives an indication of actual results in resuscitating Georgia agriculture, largely through elimination of the one-crop system. The Georgia farmer no longer carries all his eggs to market in one basket and, as the program of diversification proceeds, other money crops will be added.

Georgia farmers now are entering the marketing phase of their program. The State Department of Agriculture through its bureau of markets, in co-operation with the hundred or more county agents, is making splendid progress in creating markets, both in and out of the state, for Georgia products. More Georgia vegetables, fruits, eggs, poultry and live-stock products are being used today by Georgia consumers than ever before. Georgia farmers are raising more of their food and feed stuffs than at any other period in the past—raising enough for consumption on the farm and a surplus for sale in their neighborhood markets. While agriculture still has a long way to go before it may become universally profitable, progress made during the past five years is most encouraging to those who have the welfare of the Georgia farmer at heart.

\$1,000,000 Church for San Antonio

San Antonio, Tex.—Construction of the proposed \$1,000,000 National Shrine of St. Anthony, to be erected on a 14-acre site north of Alamo Heights, will be started within the next two months, according to F. B. Gaenslen of this city, architect for the project. The first unit will consist of a church building, to be a replica as far as possible, of the Alamo, while the second unit will consist of a huge basilica to be erected to the rear of and adjoining the New Alamo, with two towers each 180 feet high. Both units are expected to be completed in 1936. The basilica will be 220 by 112 feet, with cloisters on either side leading to the entrance of the transport where it will intersect the nave. There will be five chapels on either side of the nave, extending back into the cloisters, with three back of the sanctuary and two on each side. The ceiling of the nave will be 70 feet high. Rev. Peter M. Baque, pastor of St. Peter, Prince of Apostles, Church and of the present temporary National Shrine of St. Anthony, is in charge of the project, and Drought & Lilly are engineers.

Store Door Delivery of Freight

By GUY M. WALKER, New York

A TRAINLOAD of freight arrives at a terminal. Carload lots are shunted onto switches. Less than carload lots are unloaded into terminal buildings. Then notices are sent out to the consignees announcing that goods have been received for their account, and then the railroad company sits back and waits until these people at their convenience or the convenience of the truckman call for the freight and take it away.

In 1914, in "Railroad Rates and Rebates," I stated "investigation will show our people where the cost of living really belongs, to wit: on the expensive methods of collecting traffic at one end of the railroad and the equally expensive distribution at the other."

No automobile truck has yet succeeded in reducing ton-mile cost lower than about eight or ten times higher than the ton-mile cost of railroad transportation, so as long as the mileage of the freight moved is enough to overcome the saving of loading and unloading, the railroad has an advantage with which the motor truck cannot compete.

But there is an enormous place in transportation for the motor truck. The chief opportunity for increased efficiency and saving in transportation costs lies in relieving terminals of congestion and shipments of delay in delivery. As I indicated years ago, the railroads should organize their own collecting and distribution systems at both ends of their lines. In this way collection trucks can be loaded with shipments that can at once be reloaded into cars and forwarded without loss of time. When received at a terminal the freight would be immediately unloaded into motor trucks and taken out at once and delivered to consignees, as is done by the express companies. This would in a large measure solve the terminal problem. There will be no need of enlarging terminals when traffic is passed through so quickly and is not permitted to accumulate in storage. It would in addition save much of the losses that now occur from delay in delivery of perishable freight. And what is even more important, it will enable the railroad companies to unload cars immediately upon receipt and start reloading them for return instead of holding them idle as is now the case for days, waiting for the consignee to come and unload them.

The proposition seems so reasonable that when store door delivery is proposed the ordinary man says at once, why have not the railroads done this before? But the answer is equally reasonable. The railroads have not done it because if they should dare to do so without being ordered to do so by some law they would immediately be ordered not to do so by some truckmen's union or some company engaged in the business of trucking, or by an organization of independent truckmen who would protest, as did the Chinese carters when the first railroads were built in China, that the innovation was going to destroy their business and leave them to starve. Of course, the Chinese carters found otherwise after the railroads were built in spite of their protests, and the truckmen here would find that there was plenty left for them to do even if the railroads handled the whole of the transportation business, as they ought to do. The gain in efficiency to the public in expediting delivery, and the saving in the matter of investment in railroad rolling stock, equipment and terminals would be enormous. The Interstate Commerce Commission might justify its existence by ordering the railroads to take up store door delivery.

Wood Pole Strength Standards

New American standard values for the strength of wood in the form of poles are announced by the American Standards Association, New York, as follows: Creosoted Southern pine, 7400 pounds per square inch; chestnut, 6000 pounds; Western red cedar, 5600 pounds; and Northern white cedar, 3600 pounds per square inch.

Under provisions of the National Electrical Safety Code these values automatically replace the old figures of 6500 pounds for dense yellow pine, and 5000 pounds for other yellow pine, chestnut and Western red cedar in general use by pole line engineers. Northern white cedar remains unchanged. The new standards are the result of an extensive study conducted by the Association's Sectional Committee on wood poles.

The public utilities of this country require annually a total of approximately 4,000,000 poles, Southern pine, cedar and chestnut.

Concrete Aggregates

BELIEF that there is a very important potential market for a lightweight, burned shale or clay aggregate for use in concrete, if manufactured on economical lines, has brought into consideration several processes, one or all of which possibly may fit into the opportunity. It is understood that the Federal Bureau of Mines contemplates undertaking a work of research and investigation of the aggregate-making properties of shales and clays in various parts of the country, and experimental work has been done by Rutgers University at New Brunswick, N. J., and by Professor G. A. Bole of Ohio State University.

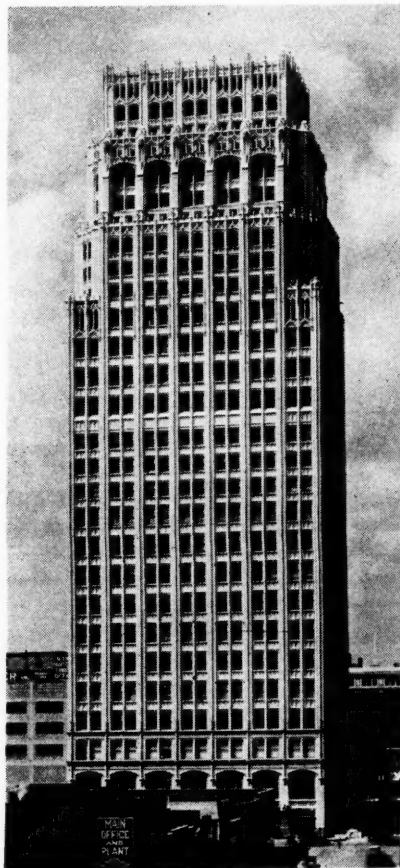
Of four processes designed to make burned aggregates, Argil-lite is probably the most recent and Haydite at present may be the best known. Also, there are Corlite and a sintering process.

Introductory to a description to the MANUFACTURERS RECORD of Argil-lite, of which he is the originator, Knox Harding, Los Angeles, says that his company has a plant, with the largest ceramic rotary kiln in the world, and continues:

"This fires 1,000,000 pieces of finished clayware per minute, inflating the refractory coated balls of clay into cellular or hollow clay beads three to six times lighter than solid burnt clay. An auger-heads machine extrudes not one column, but 1000 round pugs and transversely synchronized travelling wires cut them, 17 times per second, into 17,000 damp plastic billets. These are fed through an amplified continuous chewinggum ball rolling and coating machine and powdered with an outer contacting surface of refractory, non-welding ceramic material. An open, loose, freely permeable contacting mass of these units are rolled through the kiln in 21 minutes and produce 21,000,000 pieces of finished ware.

"The Harding process of subjecting a contacting mass of separate, discrete ceramic material to temperatures above the fusing and welding temperature of

their inflatable bodies simply consists in providing and maintaining on each of the nonamtic units of the contacting mass of the rolling, stirring, heated, softened and weldable and inflatable



14 Stories Were Added by Use of Haydite
This 28-story telephone structure in Kansas City was originally a 14-story building.

bodies of fusible ceramic material a superficial outer contacting surface or shell of less fusible, more refractory, non-weldable ceramic material.

"Any skilled potter or ceramist knows how to make a fusible earthenware body, four to eight cones, more refractory, and that is one of a dozen important steps in the Harding system for making light, strong ceramic aggregate, that makes the lightest strong concrete blocks, or the strongest light concrete."

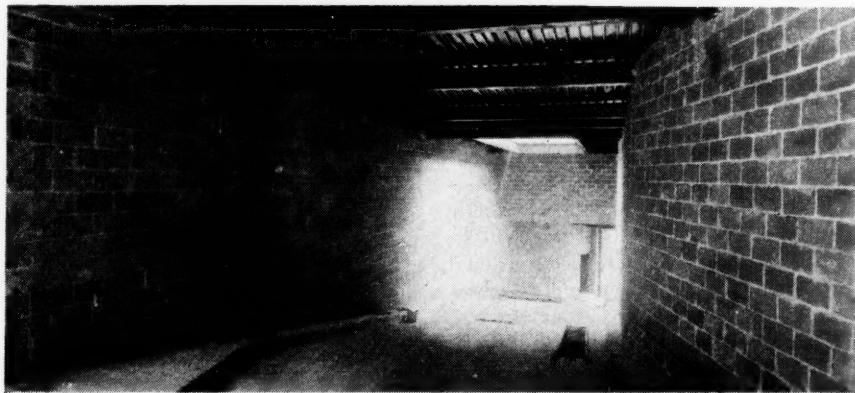
Haydite, manufactured by the Haydite Company, Kansas City and Pittsburgh, and at several other points, is described as clay, shale or shale rock, burned under patented processes, properly crushed, screened and graded. It is furnished separately in both the fine and coarse aggregate sizes, which, when mixed with the same cement content in the finished concrete as would be used with natural aggregates, is said to produce concrete fully one-third less in weight than ordinary concrete weighs. A claim is made for it that it develops at least the full strength of concrete made with natural aggregates and that it produces a more fire-resistant job.

In the process of manufacture, the clay, shale or shale rock is crushed to the proper size for burning and fed into a rotary or other type of kiln. Leaving the kiln in the form of clinkers of various sizes, it is allowed to cool, after which it is crushed, screened and graded to the different sizes desired. The burning, crushing and screening operations are said to be at all times under positive control, assuring uniformity of product, both as to burning and screen analysis.

Haydite is used in the manufacture of all kinds of pre-cast concrete products, including artificial building stone, building brick, sewer pipe, burial vaults, fence posts, piling, drain tile, and so on. It is said by the manufacturers to be a non-conductor of heat and cold, devoid of capillary attraction and largely sound-proof. Nails driven into it will hold and will not greatly deteriorate.

In the sintering process, crushed clay or shale is pugged with crushed coal and burned in a sintering furnace of the same kind as is used in the metallurgy industry. Patents covering this process are controlled by Craig, Skidmore & O'Brien, Chicago, the MANUFACTURERS RECORD is informed.

The fourth process to produce a type of aggregate uses household ashes and ordinary cinders as the raw material. This is being developed in New York City, under the name of Corlite. The Corlite Corporation expects to be able to give full and detailed information on this project early next year.



Showing Exposed Interior Walls of Haydite Blocks Before Painting

Road Show Program

WITH all available exhibition space reserved in the two exhibition buildings, and more than 5000 reservations made for hotel accommodations, the twenty-eighth annual convention and exposition to be held January 12 to 16 inclusive at the Arena in St. Louis, Mo., by the American Road Builders' Association, is expected to surpass all previous affairs of this kind as the world's largest and most comprehensive exhibition and demonstration of road and street building machinery. Over 500 carloads of machinery and equipment will be distributed over the eight acres of floor space by the 310 exhibitors. Exhibits are to include many late developments in equipment, materials and methods. A new feature will be an entire section devoted to displays pertaining to operation and transportation of motor freight.

The convention, which each year brings together upwards of 25,000 road builders from all parts of the United States, South America and other parts of the world, is to open Monday, the twelfth. Thomas H. MacDonald, chief of the United States Bureau of Public Roads, will speak. Monday afternoon will be devoted to the county sessions, with Stanley Abel, president of the County Highway Officials' Division, presiding. Among the general committee reports to be heard is one on highway finance and administration.

Meetings to discuss highway location and airport drainage and surfacing, as well as the new motor freight session and the first session for contractors, will be held Tuesday morning. In addition to the meeting of City Officials' Division, of which C. E. Myers is president, Tuesday afternoon will be taken up by another meeting of the contractors and county officials and by a general committee report on construction and maintenance methods for low cost roads and bridges. Subjects to be covered by the four general committee meetings scheduled for Wednesday morning include subgrades and pavement bases, snow removal and equipment, grading methods and equipment, and standardization of methods for purchasing equipment. City and county officials will again meet Wednesday afternoon.

M. A. Corrales, president of the Pan American Division, will lead this division's meeting Thursday morning, when committee conclusions and recommendations will be presented in Spanish. Two general committees will hold sessions at which reports will be read on central and transit mixed concrete, and on highway guard rail. The final sessions and business meetings are planned for Thurs-

day afternoon, when there will also be a business meeting of the American Road Builders' and the American Association of State Highway Officials.

Among the social events planned in connection with the convention are: Reception tendered Sunday in honor of the delegates from outside the United States; International Smoker, Monday evening; Contractors' Supper Dance, Tuesday evening; Road Builders' Banquet, Wednesday, and the International Ball, Thursday.

Big Drainage Project

St. Louis, Mo.—The Board of Public Service opens bids January 13 for construction of Section J of the \$11,000,000 River Des Peres drainage project here. This section, estimated to cost \$914,500, will involve the construction of an open channel approximately along the route of the River Des Peres from a point about 2000 feet west of Gravois avenue to a point near the intersection of Wellington Court and Leamington avenue, with lateral sewers, manholes, interceptors and appurtenances. The open channel will have a bottom width of 140 feet for approximately 2700 feet; 125-foot bottom width for 11,200 feet and 40-foot bottom width for 800 feet. Construction of the project is under the supervision of W. W. Homer, chief engineer of the sewers and paving division of the city.

American Mining Congress Work

The sixth annual industrial development conference of the Southern division of the American Mining Congress will be held at Louisville, Ky., March 16, 17 and 18. Captain R. M. Watt of Pineville, Ky., chairman of the board of governors of the Southern division, will be in charge of the program. In addition to general subjects affecting industrial development in the South, detailed consideration will be given to industrial development projects conducted by the American Mining Congress for the Kentucky Progress Commission. One day will be devoted to industrial sightseeing around Louisville, where members and delegates will be entertained by the Kentucky and Indiana Terminal Railroad Co.

Industrial development surveys are now in progress in Arkansas similar to those of the Mining Congress in Ken-

tucky. Dr. Henry Mace Payne, consulting engineer, is in special charge of these activities, and the general work in Arkansas will function through the State Chamber of Commerce of which Dudley V. Haddock is secretary.

1931 Advertising Budgets To Exceed 1930 Total

The December number of Trends and Indications, issued by Dorrance, Sullivan & Company, Inc., New York, states:

A survey covering 256 of the prominent national advertisers in the country was made recently to determine the course of advertising in the coming year. Sixty of the companies contacted reported that they had planned to increase their advertising appropriations for 1931 with increases ranging all the way from one per cent to 200 per cent among the different companies.

One hundred and twenty-one companies covered in this survey reported their 1931 advertising appropriations to be the same as those under which they had been operating during the current year. On the other side of the picture the remaining 14 companies reported an expected decrease in advertising expenditures with the range from one to fifty per cent.

Sixty-one companies out of the total covered in this survey by the Association of National Advertisers were unable to give definite figures, but the majority of these companies planned to maintain or increase their appropriations without yet having made definite budgets for the coming year.

Device for Scouring Rice

A rice-scouring device designed mechanically to remove bran from small samples of brown rice and also to remove the hulls and bran from rough rice of good milling quality, has been developed by R. M. Gehl of the United States Department of Agriculture. A publication by the department, entitled "The Gehl Laboratory Rice-Scouring Device," says that the operation makes possible more accurate inspection, since the product becomes comparable in appearance to commercially milled rice. The device was developed to aid rice inspectors, rough and brown rice dealers, rice millers, and salesmen and graders of rice-selling organizations. Construction specifications of the apparatus may be obtained from the office of information, Department of Agriculture, in Circular 136-C.

LETTERS FROM OUR READERS

Railroads Have Largely Reimbursed Government

Savannah, Ga.

Editor Manufacturers Record:

I have noted with interest the comment by W. E. Worcester, in a recent issue, in reply to a previous article by A. E. Clift, president of the Central of Georgia Railway.

While I am not connected in any way with the Central of Georgia, I am a railroad employe and am interested in anything that affects their welfare. As a reply to Mr. Worcester's argument, I refer you to an editorial appearing in the Railway Age of December 6, which contains in substance the following:

Conditions in this country have changed somewhat since 50 years ago, when the government subsidized the railroads as a means of developing transportation where none existed. "In spite of the government aid given," states the editorial, "those who then invested in railroads incurred great risks and often later suffered heavy losses. At present the country has adequate means of transportation and the best railway service in the world."

Furthermore, the railways through taxes and service, have largely or wholly reimbursed the government for the aid long ago given to them. In 1928 the aggregate saving to the government in both freight and passenger rates, resulting from terms under which land grants were made to the railroads, was \$4,350,000. The land given to the railways was of little value at the time, and railway development enabled the government to sell its own land at prices much higher than would otherwise have been possible.

J. CLYDE MIXON.

Mississippi Flood Waters as a Potential Asset

Fenner & Beane.

New Orleans.

Editor Manufacturers Record:

In discussing the suggestion of Mayor Curley of Boston that a billion dollars be promptly spent on the Mississippi River, as an unemployment measure you stated:

"The improvement and development of the Mississippi River is too big a problem to be solved by the mere suggestion to expend one billion dollars or double that amount."

That the problem is a big one is obvious. Its difficulties are largely mental, and they appear appalling only because the fundamentals are not understood.

Regarded as a liability, the surplus flood waters of the Mississippi drainage basin have long baffled the engineers. But once we come to regard those waters as a potential asset, the aspect of the problem completely changes.

Competent economists, with very little

field work, could and, when given an opportunity, will point out the many valuable uses to which that surplus water can be put—streamflow regulation in aid of navigation and an equalized water supply; power development in aid of industry and domestic economy; irrigation in aid of agriculture—the whole yielding a new and as yet unused economic margin for business of the very first magnitude.

Once economists have pointed the way, the several interested bureaus—forestry, reclamation, power, commerce, soil, etc., acting jointly, could plan comprehensively, treating each water shed as a unit. The carrying out of the plans could best be intrusted to that particular bureau best equipped to handle the several parts.

The first step is the setting up of a waterway policy by Congress. We have no policy now.

WALTER PARKER,
Economist.

Satisfaction Is Justified

Union Bleachery

Greenville, S. C.

Editor Manufacturers Record:

We have read with more than ordinary interest your article, "Promoting New Uses for Cotton," in a recent issue. We are the producers of the fabric in question; it is the same as that on which this letter is written and known by the trade name Unitex.

You may be interested to know that we have received inquiries and orders from a number of foreign countries and from almost, or quite every state in this country. This has resulted in the distribution of enough of this material in one form or another to represent a great many millions of letterheads, broadsides for mail advertising and other more or less similar uses.

While not expecting the development of this product to bring about an advance in the cotton market, we feel at any rate a certain amount of satisfaction in having done something that in a small way at least is helpful both to the producer of cotton and to the mill making the cloth.

JOHN W. ARRINGTON, President.

Low Stocks in Evidence

J. J. Newman Lumber Company

Homochitto Lumber Company

Brookhaven, Miss.

Editor Manufacturers Record:

We thought the editorial "Depleted Shelves a Business Deterrent", on your front cover page was worth reproducing for our salesmen and best customers. Accordingly, our bulletin republished the editorial in full, with some of our own comments.

On a recent trip I found cases where retail lumber yards were unable to furnish staple items, so the editorial covers conditions which apply also to

many retail lumber yards. With production in the South now adjusted to consumption, and stocks becoming badly broken, the situation is healthy for the mills but may not be so pleasant some day for the buyers.

C. E. KLUMB,
General Sales Manager.

Wants Government to Inaugurate Gigantic Public Construction Program

Battle Creek, Mich.

Editor Manufacturers Record:

The problem at the present time is to find employment for the 3,000,000 or more men who are unemployed in the United States. Talking about it will not remedy the situation. To give the unemployed an occasional day's or week's work does not help them or the nation's business very much.

The writer suggests that it would be far better for our Federal Government again to borrow \$25,000,000,000 and issue its bonds therefor in denominations of \$50 and \$100, at 4½ or 5 per cent and use the money in building good roads, of which there is greater need, and which would be a permanent and lasting benefit to the tax-payers of the country.

We should immediately borrow \$2,000,000,000 on such bonds and start building a pavement from Jacksonville, Fla., to Los Angeles, Calif., 40 feet wide, and let it be known that any and every able-bodied man between the ages of 18 and 60 who is unemployed could obtain employment building such roads by applying to the nearest postmaster, and obtain transportation and subsistence until he arrives on the job.

The writer suggests that the first of these roads should be built in the South as our Northern climate forbids practical road building during the winter months, while 3,000,000 men ought to build a road across the country during the winter season, and in the spring they could be transported North and build a road from Portland, Me., to Seattle, Wash. It would be well to have the Northern highways have sheds built over them, and part of the sides glassed in to admit the daylight and keep the snow and ice from making them impassable during the winter.

The fact is that our country needs a half dozen such highways running from east to west and six or eight running north and south.

If this plan is adopted it would make an immediate demand for lumber, steel, iron, cement, gasoline, lubricants, coal, and bread and meat for the workers on such National highways, and set many of the mills, factories and oil refineries to work. With these at work the other industries would soon have a demand for their products and once more we would be a happy and prosperous nation.

HOMER C. VAN AKEN.

IRON, STEEL AND METAL MARKET

STEEL PRICES HOLD

Production Further Curtailed to Keep Stocks at Minimum

Pittsburgh, December 22—[Special.]—Steel production continues to decline, but not at as great a rate as usual at this particular time in the year. Steel activity always tapers off, sometimes beginning to do so as early as November 1. The recent decreasing pace is therefore not an unfavorable symptom for the future, whereas the marked decreases in September and October were, for they were the reverse of what would be expected, hence suggesting poorer general business conditions.

Steel ingot production last week was at about 36 to 37 per cent of capacity, against a rate of about 40 per cent in the last week of November. All along the line, from mills to ultimate consumers, there is a strong disposition to curtail stocks to the absolute minimum for January 1 inventory, but stocks were already so low that not much is left to be done in that direction.

Rail orders reported last week totaled 35,500 tons while the Pennsylvania Railroad put out inquiries for 200,000 tons, which may be regarded as the system's average requirements. Some other roads that have bought have taken less tonnages than formerly. There is not much tonnage on books thus far, chiefly because roads have been slower in acting. In each of the last three years, for instance, the Pennsylvania made its actual purchases in October.

Fabricated structural steel lettings in October, as officially reported last week, showed a substantial increase over September but were not up to the average of the first eight months of the year. Shipments of the shops were well sustained, showing only a slight decrease. Reports in the trade since October have shown slightly heavier bookings than the ten-month average, while new work coming up for bidding has been in large volume.

The automobile industry has gotten down to such a very low rate of production in the last two months of the year, with much more than usual seasonal decline, that seasonal upturn after January 1 seems reasonably certain. Production of farm implements, light in the last six months, is also likely to show improvement.

Line pipe production has lately dropped to insignificant proportions, even the South calling for little. While

pipe laying is not out of season in the South as it is in the North the important projects involve long lines, extending to the North and East. Prospects are that there will be some large orders in January. So far as projects go there might easily be even more line pipe tonnage next year than there was this year, but there may be difficulties in financing and the common opinion, when any opinion is formed, is that next year will hardly measure up to this year.

Tin plate contracting is well under way, with a large part of first half deliveries now covered. There has been perhaps a little more shading than usual, by way of quantity differentials on large contracts, but the market in general has held. In the past year there was little or no decrease in packers' cans, involving vegetables, fruit and milk as a whole, but rather a distinct decrease in general lines consumption, as for paints and varnishes.

Steel prices are now holding well all along the line. The general advance announced nearly three weeks ago in bars, shapes and plates to 1.65c for first quarter has driven in a fair sized volume of contracting for the quarter at the current price of 1.60c. Sheets and strips are steadier than for a long time, partly because they are at or below cost, except for specialties. Nails are quite firm, which is more than could be said of them at any time from June, 1929, until recently. Pipe has been steady right along.

WEAKNESS IN THE METALS

All Share in the General Decline

New York, December 22—[Special.]—The metal markets have been heavy and weak, mostly because of declining shares on the New York Stock Exchange and a depressed feeling in business generally. Silver sold one day last week at 31¼c per ounce, a new low in the history of the industry, comparing with \$1 per ounce during the stabilized market of war time. The price of tin went to the lowest level since 1902, selling 23½c per pound.

In fact not a metal has escaped the influence of generally declining commodity prices. Even lead, the stable metal, has been in a precarious position since prices at London had fallen below the American price parity, through advanced later. Zinc has slipped back

close to the previous 1930 low of 3.95c per pound, East St. Louis. Copper is not far above its low since 1895 of 9½c per pound.

The most cheerful development among the metals has been the improvement in the statistical situation in most of the major metals. First it was noticed that production of slab zinc declined 9000 tons during November. Then it came out that surplus stocks of refined and blister copper fell about 11,000 tons; more recently it is learned that lead production was cut 6000 tons that month.

In all cases the statistical improvement has come months after it should have, but the slogan, "better late than never" applies to the metals. Only tin has slipped backward statistically. The startling news came out during the past week to the effect that 3000 tons of hidden tin had come to light, increasing the world's visible supply by that amount. The occasion was the transfer of that amount of Banka tin from Batavia, Dutch East Indies, to Amsterdam, due to overcrowding of warehouses. This amount is equivalent to two weeks' American consumption of tin, no small amount. Tin prices broke sharply following the discovery and there was a lack of confidence lest other hidden tonnages come to light.

There is a little better sentiment in the steel industry, the makers being confident that definite improvement will set in before February. The Auburn Automobile Co. bought a tremendous amount of raw materials, including steel. Demand for sheets and strips generally has been better for the automobile industry. Building operations are falling off, though only to the seasonal extent.

The export price of copper was reduced a half cent per pound early in the week to 10.80c c. i. f. European ports and later to 10.30c. The custom smelter quotation was marked down to 10 cents, while second hands were offering to sell at 9¾c. American users are bought four months ahead, with foreign users taken care of for at least two months. Inventory-taking also occupies the consumers.

The large copper producers are out of the market, or calling the price 11 cents, which is purely fictitious. Export sales averaged 250 tons daily until the last cut in price. On Thursday they were 1825 tons. Domestic demand was better late in the week also.

At the middle of the week copper sentiment was a shade improved and a few

scattering inquiries appeared, consumers who had not been heard from in some time. It has become evident that the 10-cent quotation will be another stabilization point, perhaps to last until after the turn of the year.

A dispatch from Japan states that producers in that country have been asked to co-operate in the world curtailment movement. Japan produces about 4 per cent of the world's supply. It may take a month before Japan comes to a conclusion. Because of the smallness of its companies and the hardship in curtailing output further, such co-operation is in doubt.

On Wednesday the price of lead at London dropped to 5.02½c per pound, New York, as against the American price of 5.10c. This is the first time in several months that lead has been cheaper abroad than here. Should London prices continue to drop a revision downward here would be unavoidable, else our markets would be flooded with Mexican metal.

BETTER TONE NOTED

Pig Iron Prospects Brighter and Steel Market Improved

Birmingham, Ala., December 22—[Special.]—With trading practically at a standstill, a better tone is noted in pig iron and prospects are deemed much brighter for the turn of the year than at this time a year ago. The steel market presents a good prospect also with many of the smaller industries fabricating steel feeling that a period of activity is at the threshold.

Production of iron has been materially reduced in order that the difference in demand and make shall be reconciled. Whatever excess there may be in the shipments as compared to the make, the surplus stock of iron on yards, both sand and machine cast iron, will be able to meet any and all requirements. Surplus stock is no greater than it was six months ago, it is estimated.

Sales so far made into the first quarter of the coming year do not aggregate any great tonnage. There is some iron due melters in the East, but in home territory the buying for months has been in small lot manner and furnace interests have insisted on early delivery through the quarter in which the sale was consummated. Some of the steady melters have let it be known that they anticipate much improvement in their trade after the turn of the year, numerous lettings of cast iron pressure pipe having been placed already in this district, the plans being to keep this production at an active state in comparison with the past

several weeks and even months. Base price of pig iron is unchanged, \$14, No. 2 foundry, in the home territory.

In the steel market there are bright anticipations for the turn of the year. Accumulation of railroad business is in sight which will warrant activity in the necessities of the transportation industry.

Fabricating shops on both structural and plate steel are receiving contracts which spell activity for some time ahead. There is a good demand for sheet and the large and improved mills on this product will find a ready demand, it is anticipated, which will call for active output.

Reinforcing concrete bars as well as bridge material are feeling the effect of road building in Alabama and other Southern states and the several mills on reinforcing bars have everything in prospect so far as activity is concerned. Structural fabricating shops are participating in the developments in the immediate Birmingham district, Ingalls Iron Works Co., to furnish steel to an amount of 1600 tons for the two underpasses being constructed in the program of elimination of grade crossings. The Louisville & Nashville will have to remodel its passenger station in Birmingham and will use several hundred tons of steel in lifting its shed and platform for passenger stations. Other local work, including the airport will require steel.

The coal industry shows no improvement, keen competition of electric power, natural gas and other things being felt. The coke industry is moving along as well as might be expected under conditions. Independent producers are keeping their by-product ovens in operation, less than 400 ovens out of 1930 in the district being idle.

The scrap iron and steel market is still slow and prices low.

PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL

Steel rails	\$11.00 to	\$12.00
Steel axles	14.00 to	14.50
Iron axles	14.50 to	15.50
Heavy melting steel.....	9.50 to	11.00
No. 1 cast.....	10.00 to	10.50
Stove plate	8.50 to	9.50
No. 1 railroad wrought....	9.50 to	10.00
Car wheels	10.00 to	11.00
Tramcar wheels	10.50 to	11.50
Machine turnings	7.50 to	8.00
Cast-iron borings	7.50 to	8.00
Cast-iron borings (chem.)..	12.50 to	13.00
Rails for re-rolling.....	11.25 to	11.75

Montgomery, Ala.—Proposals to erect a paint, oil and dope warehouse; maintenance shop; warehouse, and garage at Maxwell Field will be opened January 16 in the office of the Constructing Quartermaster, Maxwell Field.

National Timber Conservation Board Appointed

Washington, D. C.—Membership of the new National Timber Conservation Board, a presidential commission, has been announced by President Hoover as follows: Secretary of Commerce Lamont, Secretary of Agriculture Hyde, Secretary of Interior Wilbur; John W. Blodgett, Grand Rapids, Mich.; John H. Kirby, Houston, Tex.; Paul G. Redington, president of the American Society of Foresters and head of the Biological Survey; Charles Lathrop Pack, president of American Tree Association; George D. Pratt, New York, president of the American Forestry Association; John C. Merriam, Washington, president of Carnegie Institution; L. J. Taber, Columbus, Ohio, Master of the National Grange; Carl R. Gray, Omaha, Nebr., president of the Union Pacific Railway Company; D. C. Everest, Rothschild, Wis., past-president and member of the executive committee of the American Paper and Pulp Association, and W. M. Ritter, Columbus, Ohio, and Washington.

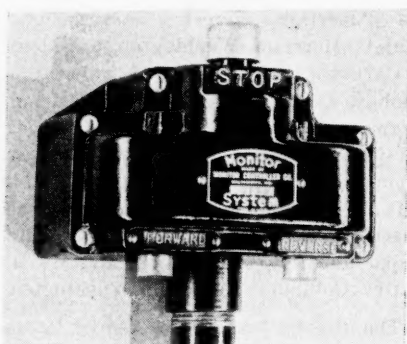
The timber board was created in an effort to improve the economic position of the natural resource industries with respect to balance of supply and demand, which was remarked by the report of the President's Committee on Recent Economic Changes. It was proposed to the President by leaders in the forest conservation movement, representatives of agriculture, owners of timber, and by the lumber and paper and pulp industries. Its task will be to compile important facts of production conditions and trends in the forest industries, analyze and interpret them and develop recommended policies and programs of public and private action, looking toward an economic balance between production and consumption of forest products and leading to the perpetuation of the forests and industries based on the use of timber. Rather than attempt to form any broad national forestry policies, the board will direct its activities, it is understood, to national economic problems involving the supply and use of forest products and the maintenance of those important sources of employment and national wealth.

The forest industries group is said to rank next to agriculture in the number of people it sustains, with investments approximating \$10,000,000,000 and annual production values around \$4,000,000,000. Raw material for this group is drawn from one-fourth the land area of the United States, of which the state and federal governments own about 100,000,000 acres, farmers about 160,000,000 acres and commercial interests the balance.

NEW AND IMPROVED EQUIPMENT

Push Button Master Station

An ironclad push button master station recently added by the Monitor Controller Co., Baltimore, to its line of control switches, is available for use in either a. c. or d. c. circuits, providing forward and reverse momentary contact control. It is said to be particularly suited to machine service and is described by the manufacturer as being constructed along simple and sturdy

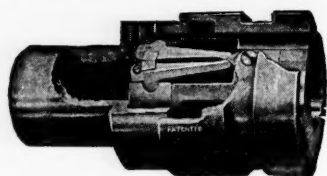


Provides Momentary Contact Control

lines, with massive yet flexible contacts and insulation mechanically and electrically strong. The arrangement of the buttons—the forward and reverse button at the bottom and the stop button on top, both in protected positions—constitutes a factor of safety and convenience and is excellently adapted, it is said, to give quick-action inching in either direction. Fixed contacts and wiring are carried in the base and push buttons in the cover.

Super-Johnson Clutch

Features emphasized in the Super-Johnson clutch, as recently modernized by the Carlyle Johnson Machine Co., Manchester, Conn., are simplified construction, compactness, quietness, cleanliness and safety. Two additional fea-



Simple and Compact

tures, where customers so desire or circumstances demand, are the one-point lubrication and special lining of the outside diameter of the expansion ring. Working parts of the clutch are of chrome steel, adding to the strength, re-

liability and life of the unit, while a locking device in the adjustment holds it secure and furthers the reliability of its operation. One size of the clutch is as small as 3 3/16 inches outside diameter.

Precision Two-Speed Hoist

The Thew Shovel Company, Lorain, Ohio, announces a Precision two-speed hoist line control for models of the Thew-Lorain crawler and locomotive cranes, described as of special value in steel erecting or general hook block lifting service, where accurate control of the load is important. According to the manufacturer the hoist offers additional protection against damage to fragile, costly loads and to workmen on the job. It is based on the principle of making both ends of the hoist line live, one end being fastened to the standard hoist drum in the usual manner. The cable is then reaved over the head of the boom, down through the hoist or snatch block, returning over another sheave at the boom point, thence down the boom to the Precision two-speed hoist drum at the base of the boom. Loads are lifted by the standard hoist



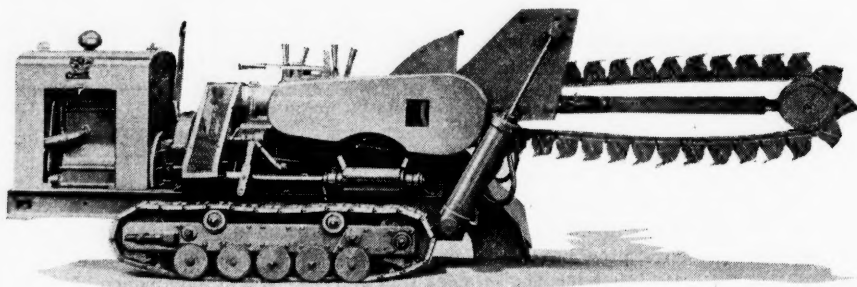
For Control of Hoist Loads

drum at standard high speed to approximate position, when the hoist brake is set and through the use of the crowd lever, the two-speed hoist is used to lower the load in position. Final positioning of the load is made under slow accurate power control, so that drift pins may be easily inserted, without danger to the load or workmen because of sudden dropping or surging from various causes.

For Small Ditching Work

To save hand work in digging ditches for small pipe, the C. H. & E. Division of the National Equipment Corporation, Milwaukee, Wis., has developed the Goldigger Model A ditcher, a machine about waist high; it is said to ditch rapidly and to remove only a comparatively small amount of dirt because of the narrow trench. It is designed for digging trenches from 3 to 6 inches wide and up to 48 inches deep for various utility requirements, with speeds varying from one to six feet per minute. Two speeds are available without chang-

ing sprockets, while 36 speeds may be had by a sprocket change. Full multi-plane traction with low ground pressure permits satisfactory operation on wet soil. Operating levers are centralized on one side of the machine and the rugged construction has been well balanced throughout. Gears and sprockets are of heat-treated steel, the former being enclosed in gear cases and run in oil. Oil in the main gear case is used for the hydraulic boom lift and is circulated back over the top of the gears in the case, giving a continuous oil bath. Power is provided by a 4-cylinder, 12 horsepower engine.



Showing Rugged Construction of C. H. & E. Ditcher

CONSTRUCTION DEPARTMENT

and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Montgomery—Hodgson-Jones Construction Co., N. Perry St., reported, has contract at \$58,811 for headquarters operation and parachute building at Maxwell Field; bids for barracks building not let; Maj. Gen. J. L. DeWitt, Quartermaster, U. S. Army, reported, let contract Jan. 16 for construction of paint, oil and dope warehouse; maintenance shop; warehouse and garage; cost \$100,000; Ogletree Construction Co., 11th St., Anniston, low bidder on base bid of \$99,282 for construction of 4 standard, 110x220 ft. airplane hangars with three bay annexes. 12-11

D. C., Anacostia—Warner Service Co., 102 W. Clinch Ave., Knoxville, Tenn., has contract at \$16,850 for electrical distribution system, Naval Air Station. 11-13

Fla., Bartow—City, reported, plans establishment of airport.

Fla., Jacksonville—Eastern Air Transport, Inc., Capt. A. P. Kern, Supt., constructing depot at city owned airport; extension of passenger service from Atlanta, Ga., through Jacksonville to Miami, with Pan-American Airways connection there with Latin-American countries to be effective Jan. 1; bids for construction depot in and work will start immediately. 12-18

Okl., Oklahoma City—City, reported, soon call for bids for conc. runways for airport; cost \$425,000; Chas. S. Russell, Archt., Oklahoma City. 12-11

S. C., Charleston—Exchange Club, Airport Committee, reported, interested in establishment of airport.

Tenn., Union City—Chamber of Commerce, Aviation Committee, H. O. Vincent, Sec., reported, interested in establishment of airport.

Tenn., Trenton—City, reported, plans establishing airport.

Tex., Galveston—City, W. B. McGarvey, City Engr., acquired 120 acres, L shape field, with space for 8 way landing, about 2 miles west of city limits; Beretta-Stiles, San Antonio, Airport Engrs., engaged to furnish plans and supervision; plans now in course of preparation. 12-18

Bridges, Culverts and Viaducts

Proposed Construction

Ala., Birmingham—Claude J. Rogers, Jefferson County Engr.; A. J. Hawkins, City Engr., and H. H. Houk, Bridge Engr. of State Highway Comsn., Montgomery, appointed as committee to draw plans for Ensley underpass.

Alabama—State Highway Comsn. receives bids for 9 bridges. See Roads, Streets and paving.

D. C., Washington—Following additional estimators on rebuilding Monroe St. bridge of Comms., District of Columbia: G. B. Mullin Co., Inc., 1296 Upshur St., N. W.; Corson & Gruman Co., 33rd and K Sts., N. W.; National Construction Co., Arlington Memorial Bridge, and M. Cain Co., Inc., 3315 Eighth St., N. E., all Washington; Whiting-Turner Construction Co., Stewart Bldg.; Mul-

lan Contracting Co., 3045 Greenmount Ave.; Acme Steel Engineering Co., 917 S. Howard St.; Merritt-Chapman & Scott Corp., Fidelity Bldg., and Peter D'Adamo, Old Town Natl. Bk. Bldg., all Baltimore, Md.; Shoemaker Bridge Co., 4 S. 15th St., Philadelphia, Pa.; bids due Jan. 5. 12-18

Florida—State Road Dept., Robt. W. Bentley, Chmn., Tallahassee, opens bids Jan. 12 for 461-ft. steel and conc. bridge and approaches over Suwanne River, Road 50.

Ky., Ashland—See Roads, Streets and Paving.

Ky., Rockport—Illinois Central R. R. Co., A. F. Blaess, Ch. Engr., Chicago, Ill., reported, plans bridge requiring 700 tons steel.

Ky., Louisville—Pennsylvania R. R., I. W. Greer, Ch. Engr., Western Region, Chicago, Ill., and City, reported, may start work soon on \$3,000,000 grade elimination project, 14th St.

La., New Orleans—War Dept., Washington, approved modified plans of New Orleans Public Belt R. R., owned by city, for bridge over Mississippi River; general span 790 ft. long between central piers, actual clearance 750 ft., 2 1-way traffic lanes 18 ft. wide and 2 railroad tracks.

La., New Orleans—New Orleans Public Belt R. R., owned by City, rushing plans for \$15,000,000 combination rail and vehicular traffic bridge over Mississippi River; 153-ft. clearance at center span; 3525 ft. long; will pass barge traffic by means of specially designed west bank span; 3 cantilever spans, west bank span of 750 ft. over main channel to be augmented by 2 spans 500 ft. each; deck trusses to support bridge from east span to levee line; 2 railway tracks in center to be flanked by 18-ft. roadway on each side of main trusses; probably construct special fenders around piers; construction awaiting sale of bonds. 12-11

La., New Orleans—City Purchasing Agt., City Hall, opens bids Jan. 6 for \$15,000 bridge over Orleans Ave. canal on axis of St. Patrick St.; conc. deck, steel supported, 40 piles, 600 sq. ft.; following estimating: Thos. H. Brockman, Canal Bank Bldg.; R. P. Farnsworth & Co., Maritime Bldg.; H. N. Moody, 815 Perdido St., and C. H. Bott, Audubon Bldg.

Miss., Lucedale—Town, Mayor and Bd. of Aldermen, Annie Kennedy, Town Clk., opens bids Jan. 6 for rein. conc. culvert, end of Manilla St.

Miss., Magnolia—Pike County Supvrs., C. E. Brumfield, Clk., open bids Jan. 5 for 2 bridges.

Miss., Natchez—Adams County Supvrs., John R. Junkin, Pres., opens bids Jan. 6 for bridge over Sandy Creek, Dist. 2; W. H. Dale, Clk. of Bd.

Miss., Tyertown—Walthall County Supvrs., J. C. Luter, Clk., opens bids Jan. 5 for creosoted pile driven bridge over Varnel Creek, Fifth Supvrs. Dist.

Mo., Boonville—Missouri-Kansas-Texas R. R. Co., F. Ringer, Ch. Engr., St. Louis, take bids in spring for superstructure for bridge over Missouri River; probably consist of 3 300-ft. fixed span, 413-ft. draw span and 285-ft. fixed span; substructure complete; private plans. 8-14

Missouri—See Roads, Streets and Paving.

Mo., St. Louis—City, Bd. of Public Service, plans expending \$1,200,000 in 1931 building viaducts to carry Kingshighway and Lafayette Ave. over tracks of Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis.

North Carolina—State Highway Comsn., John D. Waldrop, Engr., Raleigh, ordered immediate building of temporary span to replace 150-ft. section of Cape Fear River bridge, near Lillington, which recently collapsed.

Texas—Brown County Comms., Brownwood, and San Saba County Comms., San Saba, plan steel bridge over Colorado River south of Indian Creek on south line of Brown County; probably let contract at early date.

Tex., Fort Worth—Tarrant County, W. E. Yancey, County Auditor, completing plans for 2 bridges: Over Clear Fork of Trinity River on T. C. U. and Stone Foundry road, and on West Handley road; steel, rein. conc.; Damon A. Davis, County Engr.

Tex., Fort Worth—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, opens bids Jan. 9 for underpass, Jennings Ave., including demolishing present structure, \$560,000; City, O. E. Carr, Mgr., sharing cost. 12-18

Texas—State Highway Department advises permits are being requested from Congress for following bridges over Sabine River; between Starks, La., and Deweyville, Tex.; between Leesville, La. and Newton, Tex., on State Highway 45 in Texas; between Many, La., and San Augustine, Tex.; no funds provided to cover cost of construction, but may be provided during 1931.

Texas—State Highway Comsn., G. G. Wickline, Bridge Engr., plans \$75,000 steel, conc. and timber bridge over Navasota River, Highway 21, Robertson and Leon Counties, F. A. 582-D.

Texas—State Highway Comsn., G. G. Wickline, Bridge Engr., plans \$90,000 steel and conc. bridge over Navasota River, Highway 21, between Brazos and Madison Counties, F. A. 490-C.

Tex., Decatur—Wise County, C. Faith, Judge, plans \$35,000, steel, rein. conc. overpass over tracks of Chicago, Rock Island & Pacific Ry., W. H. Peterson, Ch. Engr., Chicago, Ill.; O. W. Hunn, Engr., Decatur.

Tex., El Paso—El Paso County Comms., Court, E. B. McClintock, County Judge, and El Paso Brick Co., Smelter, plan \$15,239 bridge over Rio Grande.

Va., Alexandria—City, Wallace Lawrence, Mgr., and Arlington, C. L. Kinnear, Engr., Courthouse, Rosslyn, probably call for bids Dec. 30 for \$12,000 conc. bridge, Mount Vernon Ave. 9-11

Va., Richmond—Finance Committee of City Council adopted resolution authorizing appropriation of \$20,000 additional for repairs to Ninth St. bridge. 12-11

Virginia—State Dept. of Highways, C. S. Mullen, Engr., Richmond, opens bids Jan. 6 for 2 bridges, both Brunswick County; 65-ft. bridge, 0.4 ml. from Lawrenceville, Route 12, 8330 lb. rein. steel, 57,000 lb. struc. steel, 2200 lin. ft. piles, F566-B1; 32 ft. 6-in. bridge, 2.6 ml. from Lawrenceville, Route 12, 13,195 rein. steel, F566-B1.

Contracts Awarded

Ala., Birmingham—Southern Construction Co., Inc., Gen. Contr., 615 S. 11th St., advises let contract to Buchanan Construction Co.

for excavation and steel erection (1700 tons) in connection with grade separation, 18th and 20th St. 12-18

Ga., Thomasville—City let contract to Scott Construction Co., Thomasville, has contract for several bridges costing about \$10,000. 10-30

Mo., University City, St. Louis—City, E. L. Bruns, Clk., let contract to Condon, Cunningham & Lemon, Route 66, Eureka, for timber bridge over River Des Peres, Purdue Ave. 12-18

Mo., Valley Park—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, build \$37,000 rein. conc. and steel subway with own forces. 12-18

Oklahoma—State Highway Comsn., Lew Wentz, Chmn., Oklahoma City, has preliminary plans for 4-span 96-ft. rein. conc. bridge over Devils Canyon, Grady County; \$30,000. 12-18

Tenn., Memphis—Shelby County Commrs., E. W. Hale, Chmn., let contract to F. V. Ragsdale, Dermon Bldg., at \$11,982, for steel bridge with steel foundations over Wolf River; to L. E. Harris, West Memphis, Ark., at \$0.28 for 16,000 cu. yd. earthwork. 11-20

Tex., Fort Worth—Tarrant County, W. E. Yancey, Auditor, let contract to Austin Bridge Co., 1813 Clarence St., Dallas, at \$18,822, for bridge over West Fork of Trinity River, White Settlement road; Damon A. Davis, County Engr. 12-11

Va., Richmond—City, R. Keith Compton, Director of Public Works, has low bid from Phillips Lumber Co., Mutual Bldg., at \$5830, for lumber for restoring flooring of Ninth St. bridge. 12-11

Canning and Packing Plants

Fla., Tampa—Union Baking and Packing Co., Ybor City, 1506 Ninth Ave., reported, plans installing additional equipment for canning beans and vegetables.

Clayworking Plants

N. C., Asheville—Pisgah Clay Co., capital \$50,000, incorporated; Fred T. Allen, Jackson Bldg.

Coal Mines and Coke Ovens

Ky., Hazard—Jeda Coal Co., capital \$25,000, incorporated; E. J. Davis, J. E. Johnson.

Va., Pocahontas—Pocahontas Fuel Co., Inc., reported, erecting coal tipples at Bishop; foundation finished; will carry line about 2 miles above Bishop to take care of future developments in 20,000 acre tract in Tazewell and McDowell Counties; Link-Belt Co., Chicago, Ill., has contract.

W. Va., Bud—Alpha Pocahontas Coal Co., Alpoca, reported, leased Thermo Pocahontas Coal Co.'s mine at Bud.

Cotton Compresses and Gins

Ga., Savannah—D. H. Floyd, 5 W. Broadway St., plans erecting cotton ginnery and pickery on Port Wentworth Highway.

Tex., Lavaca—Blue Gin, capital \$20,000, incorporated; C. M. Curry, Roy Kiser.

Drainage, Dredging and Irrigation

Ala., Birmingham—City, A. J. Hawkins, City Engr., opens bids Jan. 23 for earth and rock excavation and rip-rap masonry, sec. 3, Village Creek drainage project, from Ave. W. Ensley, to 10th St. West; 149,200 cu. yd. earth excavation, 65,000 cu. yd. rock excavation, 700 sq. yd. rip-rap masonry. 12-4

Fla., Jacksonville—U. S. Engr. Office has low bid from Reliable Dredging Co., for approx. 605,000 cu. yd. dredging, Indian River portion, Intracoastal Waterway between Jacksonville and Miami. 12-4

La., Alexandria—City plans drainage system.

Mo., University City, St. Louis—City, E. L. Bruns, Clk., let contract to Riley Constructing Co., 110 N. Seventh St., St. Louis, for excavating river tunnel through blocks 3, 4 and 6, Central Heights. 12-11

Va., Quantico—Chief, Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contracts to Trimont Dredging Co., 10 State St., Boston, at \$473,380, on Items 2 and 6 and at .194 per cu. yd. on Item 5, dredging at marine barracks; to Standard Dredging Co., Woolworth Bldg., New York, at \$147,290 for Item 3. 12-11

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ky., Owensboro—City, reported, install new boiler and appliances.

La., Oakdale—City, reported, engaged F. P. Joseph, Const. Engr., Glenora, to make survey for light and power plant.

La., Winnfield—Louisiana Power and Light Co., Algiers, reported, construct high power line from near Standard to point 5 miles west of Winnfield; will supply power to 100 car daily capacity crusher to be constructed by Louisiana Quarry Co., lessee of Southern Mineral Co. and for salt and other mining operations of Louisiana Development Co.; construct sub station for power line at Winnfield.

Md., Crisfield—Eastern Shore Public Service Co., Salisbury, granted 5 yr. contract.

Missouri—Empire District Electric Co., 414 Joplin St., Joplin, reported, begun construction of 66,000 volt power line, connecting Empire system with system of City Light & Traction Co., Sedalia; line will be built from Springfield, 83 miles to Cole Camp, a pump station of Texas-Empire Pipe Line Co., 709 Philtower Bldg., Tulsa, Okla.; will tap Marshall line 9 miles north of Springfield and later will build line to Nichols Junction; install transformer equipment at Sedalia and at Cole Camp.

N. C., Bailey—Carolina Power and Light Co., Raleigh, reported, acquired town power distribution system.

Okla., Hominy—City, G. H. Blackwood, Clk., voted \$150,000 bonds for electric light plant and distributing system; will soon employ engineer and will be ready for bids in about 60 days; will also install electrically driven water pumps. 12-4

Okla., Nowata—Independent Power and Light Co., applied for 25 yr. power franchise; hearing in Jan. 11-27

Tenn., Memphis—Phoenix Utility Co., 2 Rector St., New York, is constructing high tension river crossing for Memphis Power & Light Co. over Mississippi River, below President's Island; about 10 miles from Memphis; contract for tower foundations and anchorage has been sublet to Woods Brothers Construction Co., Lincoln, Neb.; each tower will be supported on 4 hollow conc. cylinders 12 ft. in diam. and 128 ft. long; these foundations will support steel towers 435 ft. high, carrying 6 high tension conductors, with river span of 4300 ft. and anchorage spans of 1800 ft.; crossing is part of high tension connection between system of Arkansas Power and Light Co. and Memphis Power and Light Co. 12-18

Tex., McAllen—City, reported, postponed election on purchase of privately owned power plant.

Flour, Feed and Meal Mills

Mo., Kansas City—Quisenberry-Hobbs Co., incorporated; T. E. Quisenberry, 63rd and Blue Ridge Sts.; company is consolidation of merger of Quisenberry-Hobbs Co. and Q's Gold Bond Feed Mills.

Tex., New Braunfels—H. Dittlinger Roller Mills Co., reported, acquired flour and mill properties of Landa Industries, Inc.

Garages and Filling Stations

Fla., Lake Worth—Charles B. Payne, erect filling station on N. Dixie Highway between 8th and 9th Ave.; frame, conc., block and stucco.

Fla., Orlando—James Peterson Construction Co., Inc., 404 State Bank Bldg., has contract for 1 stop filling station, N. Orange Ave. and Colonial Ave., to be operated by Pan-American Petroleum Corp., Rhodes-Haverty Bldg., Atlanta, Ga. 12-18

Ga., Augusta—J. B. Motley, reported, has contract at \$16,054, for service station for J. L. Etheridge, 2750 Hillcrest Avenue, at 7 Broad Street; 1 story; 103x85 ft.; conc. foundations; brick and tile walls; struc. steel frame; Firestone Tire & Rubber Co., Akron, O., lessee.

Ga., Atlanta—A. K. Adams Co., 542 Plum St., N. W., reported, low bidder on erection of filling station near Buckhead for Pan-American Petroleum Corp., Rhodes Haverty Bldg.

Md., Curtis Bay, Baltimore—J. D. Stinchcomb, 4812 Pennington Ave., will erect filling station, Pennington Ave. and Ceddox St.; 1 story, brick or conc. block.

Md., Baltimore—American Oil Co., American Bldg., may construct 3 or 4 filling stations; brick and stucco.

Md., Baltimore—James H. Easton, 4128 Roland Ave., erect filling station Forty-first St. and Falls Rd., 1 story; brick.

Md., Baltimore—Shell Eastern Petroleum Products, Inc., Court Square Bldg., may erect 1 story, brick and stone filling station Washington Blvd.; plans probably ready in Jan.

Mo., Joplin—Ox Oil and Gas Co., 1329 Joplin St., let contract to John Phillips, 2412 Connor St., for warehouse service station, rest station and engine cleaning plant; will install all new equipment. See Want Section—Machinery and Supplies. 12-18

Mo., St. Louis—Chateau Motor Corp., capital \$15,000, incorporated; Sam Schwartz, 1432A Montclair St.

N. C., Kings Mountain—Kings Mountain Motor Co., capital \$50,000, incorporated; W. K. Mauney.

S. C., Greenwood—Harrison Motor Co., reported, acquired for Shell Petroleum Corp., Oregon Filling Station, No. 1 and No. 2; will remodel.

Tex., Austin—H. W. Nunnelee, 4215 Guadalupe St., reported, erect filling station, 4201 Guadalupe St.

Va., Portsmouth—Motor Repair Service & Storage Corp., capital \$50,000, incorporated; John C. Jones, 1804 Green St.

Va., Richmond—Eastern Specialty Corp., capital \$15,000, incorporated; Walter M. Jones, 4205 Stonewall Ave.

Va., Wellington Sta., Alexandria—Malcolm Matheson erect addition to garage; bids opened Dec. 29; brick, conc. and wood shingle roof; electric wiring; plumbing; septic tank, etc.; contractors estimating; Ira Cannon, Alexandria; Martin Bros., 1341 Connecticut Ave.; Frank L. Wagner, Inc., 10 L St., S. E., both Washington, D. C.

W. Va., Bluefield—Dr. A. H. Hoge, Maryland Apts., and Dr. E. W. Horton, Bailey Bldg., reported, plan filling station cor. Princeton Ave. and Giles St.

W. Va., Huntington—Blair Motors, Inc., 351 Fourth Ave., capital \$50,000, incorporated; Frank J. Blair, 18 California Ave., Charleston.

Gas and Oil Enterprises

Ky., Louisa—Wayne United Gas Co., reported, construct 7 mile, 6-in. pipe line Grassy Creek, in Morgan County, also construct compressor plant, Grassy Creek.

Md., Snow Hill—Tri-State Oil Co., Inc., chartered; D. Frank Fooks, Benjamin T. Truitt, Jr.

Miss., Brookhaven—Mississippi Industrial Gas Co., Jackson, reported, has franchise for installing gas distribution system. 10-16

Mo., Butler—J. M. Ribble, Engr., Butler, in charge of construction work in Kansas and Missouri for Western Service Corp., 610 Braniff Bldg., Oklahoma City, Okla. 12-18

Mo., Kansas City—Kaw Oil and Gas Co., capital \$16,000, incorporated; Ben Jaudon, 3215 Euclid St.

Okla., Geary—State Fuel Supply Co., Anadarko, reported, plans \$30,000 gas distribution system at Geary; applied for gas franchise at Laverne.

Okla., Oklahoma City—Tomort Oil and Gas Co., incorporated; W. W. Milam, Perrine Bldg.

Okla., Oklahoma City—Sulu Oil and Royalty Co., capital \$50,000, incorporated; Willard L. Miller, Petroleum Bldg.

Tex., Amarillo—Texilvania Oil Corp., incorporated; J. R. Phillips, Amarillo Bldg.

Tex., Austin—M. H. Crockett, Scarborough Bldg., reported, construct gasoline filling station S. W. Cor. Red River and Eleventh St., for Gulf Refining Co., 501 Chicon St.

Tex., Del Rio—Marathon Oil Co., Thompson Bldg., Tulsa, Okla., reported, plan improvements to refinery and distribution system. 11-27

Tex., Fort Worth—Rains County Oil Corp., capital \$60,000, incorporated; R. A. Westbrook, Electric Bldg.

Tex., Fort Worth—City votes Jan. 27 on acquisition and operation of natural gas distribution system. 11-20

Tex., Hull—South Lake Oil and Fuel Co., capital \$20,000, incorporated; C. B. Meadows, J. W. Austin.

Tex., Karnes—Karnes County Development Co., capital \$12,000, incorporated; J. D. Ruckman, H. B. Armstrong.

Tex., San Antonio—Duval Oil Corp., capital \$120,000, incorporated; E. R. Thomas, Milam Bldg.

Tex., San Antonio—Laurel Petroleum Co., 1030 S. Presa St., increased capital \$50,000 to \$10,000.

Tex., San Antonio—Pittsburgh Petroleum Co., incorporated; O. M. Powell, Gunter Bldg.

W. Va., Princeton—Bluefield Gas and Power Co., 615 Bland St., Bluefield, will probably receive gas franchise. 12-4

Ice and Cold-Storage Plants

Ga., Cordele—Sawyer Coal & Ice Co., E. J. Sawyer, Pres., 277 Walnut St., Macon, erect ice and storage building; cost \$75,000; conc. foundations, brick walls, tar and gravel roof; C. T. Baker, Const. Engr., Macon; owner will probably build with day labor.

Mo., St. Louis—Glauser Meat Co., Albert Glauser, 2130 Market St., reported, let contract about Jan. 15 for cooler and warehouse, 706 S. Spring Ave.; brick, struc. steel and conc., 1 story and basement, 53x129 ft. warehouse.

Tex., Dallas—Western Ice & Utilities Co., chartered; Dwight L. Simmons, Republic Bank Bldg.

Iron and Steel Plants

Ala., Birmingham—Republic Steel Corp., Republic Bldg., Youngstown, O., reported, raising blast furnace at Thomas plant, construct new blast furnace; install brass attachments; brick and liner plates; cost \$150,000.

Land Development

Fla., Lake Wales—Roco Groves, Inc., chartered; A. B. Hamburg, K. Brown.

Fla., Orlando—Wilson & Levi, Inc., chartered; M. B. Gray, F. Beck.

Fla., Orlando—Mid-State Properties, Inc., chartered; A. M. Robinson, Merritt Park.

Md., Baltimore—Linden Realty Co. chartered; Paul A. Ulman, 110 E. Lexington St.

Md., Rockville—White Flint Country Club, Inc., chartered; Walter B. McEachern, Jr., Harry P. McKenna, both of Chevy Chase.

Miss., McComb—City, reported, plans development park in Edgewood section, 23 acres.

Mo., Kansas City—Jerome C. Baum, Inc., capital \$50,000, incorporated; Jerome C. Baum, City Bank Bldg.

Mo., St. Louis—Boston Properties Corp., incorporated; Roland S. Baker, Kirkwood.

Okla., Tulsa—R. T. Daniel, 114½ E. Third St., develop 80 acre tract Lewis Ave. for community and business district; will widen Lewis Ave.; pave streets, etc.

Okla., Tulsa—Charles B. Peters, 1730 S. Cheyenne St., developing subdivisions.

Texas—H. M. Munger, Linz Bldg., Dallas, reported, acquired 22,000 acres in Zavala County; develop for colonization.

Tex., Corpus Christi—Robt. L. Harrell and Dr. George T. Lusk, Medical Professional Bldg., both Corpus Christi, plan construction of \$100,000 resort development on northern end of Padre Island; install a 2 unit marine power system to provide power for lights and refrigeration; water system and sewer system; construct pier into lagoon.

Va., Norfolk—West York Corp., capital \$20,000, incorporated; Moses Ehrenworth, Seaboard Bank Bldg.

Lumber Enterprises

Fla., Jacksonville—J. S. Lovelace, St. Johns Park, reported, plans erecting sawmill on Morgan Cress proper between Lakeshore Blvd. and McGriffs Creek.

Mo., Kansas City—Doneghy & Spink Co., incorporated; Paul Doneghy, 618 W. 62nd St.

Okla., Lawton—Amsden Lumber Co., Wichita, Kans., reported, construct 1 story, 28x115 ft. office, store room and warehouse, conc. foundations; plate glass front; cost \$12,000; H. S. Conrow, Archt., Wichita, Kans.

Okla., Shawnee—Bell-Heard Lumber Co., capital \$30,000, incorporated; W. M. Bell, Sr., Weleetka; Elmer Heard, Shawnee.

Mining

Ark., Rogers—Corona Products, Inc., capital \$25,000, incorporated; O. F. Mayfield, Rogers; R. C. Jones, Cushing.

Mo., Kansas City—A. Sutermeister Stone Co., Frost St. and Belt Line, capital \$20,000, incorporated; Herman A. Sutermeister.

Miscellaneous Construction

Ark., Garland City—St. Louis Southwestern Ry. Co., W. S. Hanley, Ch. Engr., Tyler, Tex., plans bank protection on east bank of Red River to prevent damage to east approach to new 250-ft. span on southeast end of bridge.

Fm., Okeechobee—U. S. Engr. Office, Jacksonville, opens bids Dec. 29 for core drilling in Lake Okeechobee.

Fla., West Palm Beach—William G. Warden, N. Ocean Blvd., let contract to Smith & Riddle, Inc., 210 Royal Palm Way, both Palm Beach, for 151-foot sea wall, costing \$15,000; continuation of ornamental new step-type wall along N. Ocean Blvd.

Louisiana—U. S. Engr. Office, Second New Orleans Dist., foot of Prytanla St., New Orleans, opens bids Dec. 29 for earthwork in Red River and Bayou des Glaises Levee & Drainage Dist.; Normand's Landing Levee (63 R) new levee, 40,000 cu. yd.; Barbins Landing Levee (60-61 R) new levee, 36,000 cu. yd.

Md., Annapolis—Bureau of Yards and Docks, Navy Dept., Washington, let contract to Hercules Construction Co., 21 E. 40th St., New York, at \$19,417 for repairs to sea wall, Naval Academy. 12-4

Md., Baltimore—Kinnear Mfg. Co., Columbus, Ohio, has contract for steel rolling doors in connection with pier, 4209 Newgate Ave., Canton, to be occupied by Baltimore Mail Steamship Co., Baltimore Trust Bldg.; construction under way on foundation; Sanford & Brooks Co., South and Water Sts., in charge of construction. 12-18

Mo., Kansas City—Missouri Pacific R. R., E. A. Hadley, Ch. Engr., St. Louis, reported, ready for bids about Jan. 2 for \$1,000,000, 2,500,000-bu. grain elevator, East Bottoms, Topping Ave.; to be occupied by Continental Export Co., Merchants Exch. Bldg., St. Louis; Bilhorn, Bower & Peters, Inc., Ry. Exch. Bldg., St. Louis, has contract for pile driving; E. M. Tucker, St. Louis, Archt. for Missouri Pacific System.

Mo., Osage City—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to Bilhorn, Bower & Peters, Inc., Ry. Exch. Bldg., St. Louis, at \$489,555 for standard pile clump dikes and revetment, Missouri River, Rising Creek Bend and Cote San Dessein Reach. 11-20

Mo., St. Louis—U. S. Engr. Office, Customhouse, has low bid from Woods Bros. Construction Co., Lincoln, Neb., at \$151,791, for 4000 lin. ft. piling dike, Missouri River, Dozier and Centaur Bends. 11-13

Missouri—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, has low bid from Woods Bros. Construction Co., 132 S. 13th St., Lincoln, Neb., at \$93,968, for 6600 lin. ft. standard revetment, Missouri River, Weaver's Bend. 11-27

Mo., Weldon Spring—U. S. Engr. Office, Customhouse, St. Louis, has low bid from List & Weatherly Construction Co., Rwy. Exch. Bldg., Kansas City, at \$331,704, for 9000 lin. ft. piling dike, Missouri River, Weldon Springs. 11-13

Mo., Wellington—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to W. A. Ross Construction Co., 908 W. 25th St., Kansas City, for dikes and revetment Missouri River, Camden Bend, Sni Bend and Lexington Reach. 12-11

N. C., Kitty Hawk—Constructing Quartermaster, Munitions Bldg., Washington, D. C., has low bid from Wills & Mafra Corp., 303 W. 42nd St., New York, at \$222,000, for Wright memorial, Kill Devil Hill; 57 ft. high, 70 ft. including light, foundation, 38 ft., granite, lighthouse type with airplane light; lighthouse to have own power plant. 11-27

Va., Arlington—War Dept. broke ground for approaches to Unknown Soldier's Tomb; ordered early construction; \$416,000 available.

Va., Clarendon—Arlington Post No. 139, American Legion, George F. Ricker, Commander, has approval of Arlington County Supvs., Rosslyn, for erecting memorial to World War dead; Falls Church pink granite, 11 ft. high; design by A. F. Thelander, Rees Bldg.

Miscellaneous Enterprises

Ala., Scottsboro—Progressive Age Publishing Co., capital \$20,000, incorporated; J. S. Benson, J. W. Gay.

Ark., Fort Smith—Sub-Committee of Citizens Advisory Committee recommended bond issue to repair fire stations and purchase fire-fighting equipment. See Financial News Column.

D. C., Washington—Deane Loffler Co., Benning, reported, plans abattoir at Benning; 2 story; 60x120 ft.; rein. conc.; brick and steel; slag roof; cold storage room; P. M. Anderson, Engr., Investment Bldg., Washington.

D. C., Washington—Dept. of Commerce, Bureau of Standards, has appropriation of \$350,000 for National Hydraulic Laboratory, of which \$300,000 is to be expended for building proper and balance for equipment, such as pumps, tanks, flumes, etc.; plans for building and equipment are being prepared under general supervision of an advisory committee, including Capt. J. P. Dean, Office of Ch. of Engineers, War Dept.; Gano Dunn, Pres. of J. G. White Engineering Corp., 43 Exchange Place, New York, and others; new laboratory will have 3 principal functions, will carry out fundamental investigations relating to all types of water-flow phenomena; it will make model studies of proposed hydraulic structures to determine from which is most effective in producing desired results and which will be cheapest to build and maintain; third function will be to conduct routine tests on all kinds of hydraulic instruments, meters and accessories; at present time it is not planned to install equipment for testing hydraulic turbines and pumps. 12-18

Fla., Tampa—Southern Erectors, Inc., chartered; J. R. Farrior, 709 Franklin St.

Fla., Winter Park—Florida East Coast Amusement Co., incorporated; Z. A. Huff, T. H. Eubanks.

Fla., Winter Haven—Henderson-Allsopp Co., incorporated; H. L. Henderson, J. E. Allsopp; manufacture insecticides.

Ky., Corbin—Sanitary Milk & Ice Cream Co., capital \$30,000, incorporated; R. D. Smith, J. O. Martin.

Ky., Paducah—Grace-Holmes Chemical Co., capital \$25,000, incorporated; DeLambert L. Grace, Mina G. Holmes.

Ky., Paducah—Paducah Steam Laundry, Inc., A. A. Seibert, 429 S. Third St., acquired plant Thirteenth and Broadway, formerly occupied by Model Laundry; install new machinery and operate.

La., Baton Rouge—East Baton Rouge Parish Police Jury receives bids Jan. 27 for fire engine.

La., Lake Charles—Banfield Brothers Packing Co., 915 E. Apache St., Tulsa, Okla., reported, plans addition to local plant.

La., New Orleans—H. F. Hinrichs & Son, S. & C. Bldg., prepared plans for ice cream manufacturing plant; brick and tile walls; frame and comp. roof; 72x56 ft.; 1 story; conc. foundation; cost \$12,000.

Md., Baltimore—Jersey Ice Cream Co., 1726 E. Pratt St., will probably start work in Jan. on milk plant, ice cream plant addition and garage; brick, 2 story, 90x185 ft.; McCormick & Co., Inc., Archts., 121 S. Negley St., Pittsburgh, Pa. 11-17

Md., Baltimore—Joe Bodaro and Co., Inc., 3531 Belair Rd., chartered; Joe Bodaro, W. Scott Standiford; contracting and building.

Md., Highlandtown, Baltimore—Crown Cork & Seal Co., Inc., Eastern Ave., Fleet & Kresson Sts., advises have not decided upon any plan covering reconstruction of cork sheds recently destroyed by fire. 11-13

Mo., Kansas City—M. A. Wogan Co., capital \$25,000, incorporated; Maurice A. Wogan, 700 Ward Parkway; contracting.

Mo., Kansas City—Missouri Certified Hatcheries, Inc., incorporated; W. T. Williams, 222 W. 68th St. Terrace.

Mo., Kansas City—Missouri Valley Tobacco Producers, Inc., capital \$200,000, incorporated; C. E. Peterson, 401 E. 36th St.

Mo., Kansas City—U. S. Engineering Co., 914 Campbell St., increased capital to \$60,000.

Mo., Nevada—O. O. Fuller Construction Co., capital \$50,000, incorporated; O. O. and F. E. Fuller.

Mo., St. Louis—National Tank & Equipment Co., incorporated; W. J. Patton, Chemical Bldg.

Mo., St. Louis—Roofing Tile Mfg. Co., Woodson Road, increased capital, \$25,000 to \$50,000.

Mo., St. Louis—Sun Electric Mfg. Co., capital \$25,000, incorporated; Thomas W. Carlos, 3809 Filmore St.; manufacture electrical machines.

Mo., St. Louis—J. D. Morne Wall Paper Co., 3178 Easton Ave., increased capital to \$100,000.

Mo., St. Louis—Thom-Paul Monotype Co., capital \$25,000, incorporated; William Thomson, 5417 Itaka St.

N. C., Albemarle—Albemarle Dairy Co., capital \$50,000, incorporated; C. A. Reap, Russell P. Eldridge.

N. C., Statesville—Your Laundry, Inc., chartered; W. H. Dunaway, Statesville; Carl M. Dunklee, Hickory.

N. C., Washington—Chamber of Commerce, reported, interested in establishment of creamery.

Okla., Oklahoma City—General Motors Corp., Detroit, Mich., Calvin A. Campbell, Jr., Real Estate Section, advises have no knowledge of any plans for establishing assembly plant at W. Eleventh St. by the company or any of its subsidiaries. 12-11

Tenn., Morristown—C. W. Broyles, Orinda, acquired Morristown Sun; will publish.

Tex., Corpus Christi—South Texas Publishing Co., capital \$40,000, incorporated; R. G. McDaniel, Morgan C. Smith.

Tex., El Paso—J. M. Ramirez, 2115 E. Yandell Blvd.; construction.

Tex., Galveston—Texas Eagle Publishing Co., incorporated; J. L. Estelle, 2702 L St.

Tex., Jacksonville—Sam D. Goodson Hardware Co., capital \$20,000, incorporated; Sam D. Goodson, A. E. Fain.

Va., Lynchburg—The Southerner, Inc., capital \$50,000, incorporated; E. A. Cleland, 219 Norfolk Ave.; publish magazine.

Va., Middleburg—Middleburg Saddlery Co., capital \$50,000, incorporated; D. C. Sands, manufacture harness and horse equipment.

Va., Rosslyn—Educational Sports, Inc., capital \$100,000, chartered; Valrie McMahan, Grandall Mackey; manufacture toys and novelties.

Va., Suffolk—Carolina Storage Co., capital \$25,000, incorporated; H. L. Land, River-view St.

W. Va., Boncar—Rust Engineering Co., Koppers Bldg., Pittsburgh, Pa., advises regarding construction of plant of Electro Metallurgical Co., 30 E. Forty-second St., New York; piling for furnace building and packing building nearly completed; foundation for motor power station, yard office and locomotive house have been completed and brick work started on these buildings; structural steel erection proceeding on furnace building and in few weeks a large portion of building will be enclosed; contracts for reinforcement have been placed with Carlem Engineering Co., 6949 Lynn Way, Pittsburgh, Pa.; brick to West Virginia Brick Co., 138 Summers St., Charleston, W. Va., and Stanhard Brick & Supply Co., 813 Kanawha St., Charleston, W. Va.; corrugated galv. steel roofing to American Rolling Mill Co., Middletown, O.; roofing to W. F. Overly & Sons Co., Greensburg, Pa.; and steel sash to David Lupton's Sons Co., 2263 E. Alleghany Ave., Phila., Pa. 11-6

Motor Bus Lines and Terminals

Tex., Corpus Christi—J. P. Medina and Emelio Columba, operating as J. P. Medina Bus Line, reported, granted franchise. 12-11

Va., Bluefield—Hooker Brothers, reported, granted permission by Virginia State Corp., Comsn., Richmond, to operate freight line between Roanoke and Bluefield.

Va., Winchester—J. H. Lennon, Hartford, Conn., and associates, reported, forming United Utilities, a Virginia corporation, for purchase of Eastern Public Service Corp., 1 Jefferson St., S., local bus operators; plan purchase of 8 parlor car buses for use on Knoxville-Washington line; also plans tourist service through Shenandoah Valley; Ralph Shoaf, Roanoke, also interested.

Railways

Ky., Louisville—Louisville & Nashville R. R. Co., H. T. Shanks, Pur. Agt., ordered 20,000 tons rail from Illinois Steel Co., Chicago, Ill., and Bethlehem Steel Co., Bethlehem, Pa. 12-11

Louisiana—Texas & Pacific Ry. Co., J. L. Lancaster, Pres., Dallas, Tex., applied to Interstate Commerce Comsn., Washington, for permission to sell \$13,000,000 bonds; portion to be used in acquiring branch lines in Louisiana.

Md., Baltimore—Chesapeake & Potomac R. R. Co., recently formed subsidiary of Washington, Baltimore & Annapolis Electric R. R. Co., H. T. Connolly, V.-Pres. and Gen. Mgr., applied to City for franchise ordinance to construct and operate in city limits double track freight line to link Fairfield-Curtis Bay-Brooklyn district with established electric line at Shipley, Anne Arundel County.

Mo., Kansas City—Kansas City Southern Ry. Co., B. B. Brain, Pur. Agt., ordered 9000 to 9000 tons rails from Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill., and Bethlehem Steel Co., Bethlehem, Pa.

Texas—Atchison, Topeka and Santa Fe Ry. Co., M. J. Collins, Gen. Pur. Agt., Chicago, Ill., ordered 300 box cars from American Car & Foundry Co., 30 Church St., New York, and for 500 refrigerator cars from Pullman Car & Mfg. Corp., Chicago, Ill. 12-18

Tex., Childress—Chicago, Burlington & Quincy R. R. Co., A. W. Newton, Ch. Engr., Chicago, Ill., advises regarding line of its subsidiary, Fort Worth & Denver Northern Ry., no work is being done now except final location and acquiring of right-of-way, and certain preliminary work; general contract will not be let until early in 1931. 12-11

Tex., San Angelo—Southern Pacific Co., P. Shoup, Pres., San Francisco, Calif., authorized by Interstate Commerce Comsn., Washington, to acquire control of Gulf & West Texas Ry., R. W. Morrison, Pres., 239 W. Mistletoe St., San Antonio, by purchase of capital stock. 8-7

Railway Shops and Terminals

Ala., Montgomery—Atlanta & West Point R. R. Co. and Western Ry. of Ala., O. T. Nelson, Ch. Engr., Atlanta, Ga., plans rebuilding car repair building and storage and distributing unit, recently damaged by fire with \$25,000 loss.

Tex., Galveston—Burlington-Rock Island R. R. Co., W. S. Broome, Engr., Houston, plans rehabilitating terminal properties, including placing depot, 29th St. and Ave. A in first class condition, relaying several miles of track.

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

ALABAMA—State Highway Comsn., Woolsey Fennell, Highway Director, Montgomery, opens bids Jan. 14 for 22 roads (plain cement conc. or bituminous surface courses on Portland cement conc. base) and 9 bridges, costing \$4,659,000, in following counties:

Walker—4½ mi. grading, paving, Bankhead highway, west of Jasper, and for 2 steel and conc. bridges;

Lowndes-Dallas—280-ft., steel, conc. bridge and approaches over Old Town Creek, Benton, 1000 cu. yd. excavation, guardrails, gravel surfacing, etc., F. A. P. 220;

Limestone-Madison—22 mi., Athens-Huntsville, F. A. 171, 230,000 sq. yd. paving;

Jefferson County—13.0 mi. Argo-Huffman, F. A. 225, 132,000 sq. yd. paving;

Dallas—14.0 mi., Selma-Orrville, F. A. 169, 143,000 sq. yd. paving;

Marion—12 mi., Hamilton-Guin, F. A. 173, 127,000 sq. yd. paving;

220, 100,000 cu. yd. excavation;

Cullman—3½ mi., Cullman, F. A. 151, 36,000 sq. yd. paving;

Jefferson-St. Clair—19 mi., Leeds-Pell City, F. A. 164, 210,000 sq. yd. paving;

Marengo—13 mi., Demopolis-Moscow, F. A. 188-B, 137,000 sq. yd. paving;

Colbert—20 mi., Tusculumbia-Margerum, F. A. 196, 230,000 sq. yd. paving;

Talladega—250-lin. ft. conc. bridge over Chaha Creek, Station 327-00, F. A. 62-A; 900 lin. ft. steel; conc. bridges, Talladega-Sylacauga, 62,400 cu. yd. excavation, F. A. 218; 15,000 cu. yd. excavation;

Montgomery—16.0 mi., Montgomery-Tuskegee, F. A. 216, 17,000 sq. yd. paving;

Baldwin—18 mi., Bay Minette-bay bridge, F. A. 193A-1, 190,000 sq. yd. paving;

Houston—21.0 mi., Dothan-Alaga bridge, F. A. 170, 222,000 sq. yd. paving;

DeKalb—5 mi., Collinsville-Etowah County line, F. A. 192, 53,000 sq. yd. paving;

Butler—200-lin. ft. steel, conc., overhead bridge, L. & N. R. R., F. A. 223, 4900 sq. yd. plain cement conc. paving, 4000 cu. yd. excavation;

Escambia—11 mi., Brewton-Castleberry, F. A. 189-A, 116,000 sq. yd. paving;

Sumter—14 mi., Livingston-Moscow, F. A. 188-C, 150,000 sq. yd. paving;

Morgan—120-lin. ft. conc. bridge over Cedar Creek, south of Bartselle, F. A. 83, reopened;

Talladega-Calhoun—16.0 mi., Lincoln-Aniston, F. A. 220-A, 170,000 sq. yd. paving;

Etowah—16.0 mi., Gadsden-Collinsville, F. A. 224, 170,000 sq. yd. paving;

Montgomery—4.0 mi., Montgomery-Catoma Creek, F. A. 155 revised, 43,000 sq. yd. paving;

Pike—477 lin. ft. steel, conc. bridge over Conecuh River north of Troy, F. A. 219;

St. Clair-Talladega—10 mi., Lincoln-Pell City, F. A. 222, 115,000 sq. yd. paving;

Butler—0.34 mi., Greenville-Fort Deposit, F. A. 101, reopened, 3600 sq. yd. paving;

Escambia—17.15 mi., Perdido Station-Sardis Church, F. A. 226, 180,000 sq. yd. paving;

Macon—2.20 mi., Tuskegee-Montgomery, F. A. 201-A, 23,000 sq. yd. paving.

Ala., Mobile—City, Bd. of Comms., has low bid from Eller & Olson, Cotton States Bldg., Nashville, Tenn., for majority of general street surfacing in Div. A of 27th St. improvement venture. 11-27

Kentucky—State Highway Comsn., H. D. Palmore, Ch. Engr., Frankfort, opens bids Feb. 25 for 10 mi. grading, draining, Corbin to Cumberland Falls.

Ky., Ashland—City Council, W. C. Fraillie, Mayor, approved contract submitted by State Highway Comsn., H. D. Palmore, Engr., Frankfort, for West Winchester overpass and highway improvement; joint contract is agreement between State, City, Chesapeake & Ohio Railway Co., C. W. Johns, Ch. Engr., Richmond, Va., Boyd County and American Rolling Mill Co. to share expense of \$275,000 project. 12-11

La., Bogalusa—City, J. H. Slaughter, Commt. of Streets, start work shortly after Jan. 1 surfacing Fourth St.

La., Ferriday—City, P. H. Corbett, Mayor, plans paving and installing sewers on several streets.

La., Shreveport—Caddo Parish Police Jury authorized appropriation, immediately after Jan. 1, of \$25,000 for clearing and grading various roads through parish.

Maryland—State Roads Comsn., L. H. Stewart, Sec., Baltimore, opens bids Dec. 30 for 2.71 mi. conc., General's Highway, end of Cont. AA-37 at Gotts, to Iglehart, Cont. AA-105-72.

Md., Baltimore—City, Bureau of Highways, Nathan L. Smith, Highways Engr., opens bids Dec. 31 for 12,000 sq. yd. conc. base under proposed Eastern Ave. underpass.

Md., Baltimore—City, Bureau of Highways, has low bid from Theo. Maggio, 16 N. Front St., at \$16,605, for footway repair Cont. 6. 12-11

Miss., Oxford—Lafayette County Supvrs. open bids Jan. 6 for 3.442 mi. graveling, College Hill Spur, Lafayette County, 1400 cu. yd. gravel; take bids at same time for 2000 tons torpedo or washed gravel.

Miss., Walthall—Highway Comms. of Separate Road Dist. "A" of Webster County open bids Jan. 5 for 4 roads: 3.65 mi., Proj. 19, 3650 cu. yd. common excavation, 16,550 cu. yd. borrow; Proj. 20, graveling; Proj. 22, graveling; Proj. 23, graveling.

Mo., St. Joseph—City, H. D. Judson, City Engr., plans extensive street development in 1931.

Mo., St. Louis—Streets Committee of Bd. of Aldermen approved paving Watson road, \$20,880, and repairing Vandeventer sewer, \$34,292; hold hearing Jan. 13 on widening Arsenal St., 60 to 80 ft.

Mo., St. Louis—City, Bd. of Public Service, plans expending \$2,000,000 for street paving in 1931.

MISSOURI—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, has low bids for 36 road and bridge in following counties:

Atchison—1400 ft. channel change, 1-M7B, Oscar H. Schmidt, Inc., St. Joseph, \$2598;

Audrain—1.212 mi. gravel, 22-1A, Samples & Elsea, Kirksville, \$7768;

Randolph—0.536 mi. gravel, 22-1, Samples & Elsea, \$3610;

Cedar—3.920 mi. gravel, SB-2, R. H. Sharp, Reeds Spring, \$23,724;

Clay—147.5-ft. bridge, 35TR-16, Brosnahan Bros., Kansas City, \$13,155;

Barton—4.848, 3.045 mi. chat, 160-11, 160-12, R. G. Aldridge, Kansas City, Kans., \$33,611, \$60,320;

Dade—1.996 mi. chat, 160-14, R. G. Aldridge, \$22,498;

DeKalb—3.892 mi. gravel, SA-2, Martin Wunderlich, St. Paul, Minn., \$13,592;

Franklin—4.670, 4.811, 4.740 mi. 20-ft. conc., 326D, 326E, 326F, A. A. Davis & Co., Inc., Cotton-Grain Exch. Bldg., Oklahoma City, Okla., \$85,795, \$72,027, \$50,878;

Gasconade—4.879 mi. gravel, SE-1, F. T. O'Dell, Hannibal, \$16,559;

Lawrence—0.833 mi. gravel, 38-16, Neyer Construction Co., Billings, \$21,222;

Greene—4.579, 4.010 mi. crushed rock, 38-17, 38-18, Neyer Construction Co., \$32,121, \$19,780;

McDonald—guard fence, 71, H. C. Grunewald, St. Louis, \$10,100;

Monroe—3.346, 2.898, 3.182 mi. gravel, SD-3B, SM-1A, SM-2A, W. J. Menefee Construction Co., 240 S. Mantau St., Sedalia, \$4955, \$43,47, \$4711;

Mississippi—2.936, 2.541 mi. 24-ft. graded earth, Ref. 8A, Ref. 8B, Dent Tanner, Charleston, Mo., \$9581, \$4896;

Newton—3,624, 3,938 mi. 20-ft. conc., 60-5, 60-6, Koss Construction Co., Des Moines, Ia., \$94,453, \$111,683; 0.953 mi. gravel, Ref. 2, C. I. Williams, Monett, \$11,235;

Nodaway—5,518, 4,375 mi. gravel, SA-1A, SA-2, K. W. Ferman & Co., LaPlata, \$8112, \$25,033; 1.034 mi. 30-ft. graded earth, 308B, Brosnahan Bros., \$37,125;

Polk—3,712, 3,353, 3,452, 4,418 mi. gravel, SA-2, SA-5, SA-6, SA-7, J. A. Kerr & Co., Ozark, \$8840, \$13,342, \$11,741, \$17,294;

Ripley—4,960 mi. gravel, 21-51, R. E. Martin, Cotton States Bldg., Nashville, Tenn., \$98,819;

Taney—2,282 mi. gravel, Ref. 1, A. E. Keith Construction Co., City Bank Bldg., Kansas City, Mo., \$13,026;

Wright—2,510, 4,780 mi. gravel, 5-80, 5-81, H. H. Ruddell, 759 Stamford St., Springfield, \$13,446, \$32,991;

Warren—2,790 mi. gravel, SN-1, F. T. O'Dell, Hannibal, \$20,430. 12-11

Mo., Troy—City probably take new bids soon for paving Main St.; Russell & Axon, 6200 Easton Ave., St. Louis, and McDaniel Bldg., Springfield, Engrs. 12-11

N. C., Fayetteville—City, Bd. of Aldermen and Mayor, plans resurfacing several streets, costing approx. \$40,000.

Oklahoma—See Contracts Awarded.

South Carolina—State Highway Dept., Ben M. Sawyer, Ch. Commr., Columbia, opens bids Dec. 30 for 14.824 mi. plain Portland cement conc., Route 30, Hartsville to Route 601 near Society Hill, 154,543 cu. yd. excavation, 69,584 cu. yd. pressure jetting embankments, 10,859 cu. yd. top soil for shoulder, paving, 156,801 sq. yd. paving, 74,082 lb. rein. steel, 5587 sq. yd. wire mesh reinforcing, 2535 lin. ft. rein. conc. pipe, 1300 tons riprap. (Portion of letting recently announced.) 12-18

Tenn., Chattanooga—Hamilton County Commrs., T. S. Wilcox, Chmn., probably postpone opening bids for approaches to Avondale tunnel until spring.

Tenn., Chattanooga—City, W. H. Wilson, City Engr., plans repaving Walnut St. bridge.

Tex., Fort Worth—Tarrant County, W. E. Yancey, Auditor, completing plans for 3 mi. 40-ft. grading, asphalt surface with rock base paving, Rosen Ave. to Lake Worth, \$40,000; Damon A. Davis, County Engr.

Texas-Oklahoma—Texas State Highway Comsn., G. G. Wickline, Bridge Engr., Austin, and Oklahoma State Highway Comsn., Lew Wentz Chm., Oklahoma City, probably let contract late in January for \$110,000, 3000-ft. bridge between Vernon, Tex., and Elmer, Okla., Texas Highway 23. 12-18

Texas—State Highway Comsn., Gibb Gilchrist, Engr., Austin, and Washington County Commrs., Brenham, soon start erecting fences along Highway 20, Washington, preparatory to widening shoulders.

Texas—State Highway Comsn., Gibb Gilchrist, Engr., Austin, plans 4.05 mi. crushed caliche gravel base course, Highway 3, D'Hanis west, Medina County, \$12,800.

Texas—State Highway Comsn., Gibb Gilchrist, Engr., Austin, plans 12.5 mi. widening shoulders and ditching, Highway 64, Henderson east to Panola County line, Rusk County, \$15,000.

Tex., Corpus Christi—City Council authorized Glen Blackburn, City Engr., to draw plans and call for bids for approaches to bluff from lower business district, costing approx. \$17,000.

Tex., Houston—City, J. M. Nagle, City Engr., has low bids from Uvalde Rock Asphalt Co., 820 Dowling St., for paving; Brazos St., Webster to Anita, \$31,842 for asphalt, and \$40,521 for brick; Brazos, Jefferson to Calhoun, \$3760 for asphalt, \$4796 for brick; Crawford St., \$21,609 for asphalt and \$27,110 for brick.

Tex., Houston—City Council authorized 42-ft. paving Smith St., between Hawthorne and Calhoun Ave., \$68,000; J. M. Nagle, City Engr., to prepare survey and estimate of cost of opening Smith St. north.

Tex., Houston—City, J. M. Nagle, City Engr., plans paving Brunner and Lowell St.; considering graveling several streets.

Va., Hopewell—City may build road, Hopewell to Camp Lee prison camp.

Va., Norfolk—City Council authorized constructing granolithic sidewalks on both sides of 48th St.

Va., Richmond—City, Dept. of Public Works, plans 15 smooth paving and sewer construction projects; total outlay planned for street and sewer improvements for 1931, \$700,000.

W. Va., New Cumberland—Hancock County Commrs. have low bid from J. R. Rice, Bel-

mont, Ohio, at \$83,000, for 2.66 mi. road to connect William Penn Highway with West Virginia State Route 2; second of series of 4 projects in special \$300,000 bond issue.

Contracts Awarded

Alabama—State Highway Comsn., Woolsey Finnell, Director, Montgomery, let contract to Morgan-Hill Paving Co., Woodward Bldg., Birmingham, for 10 mi. paving, Tuscaloosa County Highway, extending from point near Bessemer, Jefferson County, to Tuscaloosa County line, at \$181,275.

Alabama—State Highway Comsn., Woolsey Finnell, Director, Montgomery, let contract to Couch Construction Co., Dotman, at \$406,941, for 26.96 mi. conc. paving, grading, draining, Mobile to Citronelle, Mobile County. 11-27

Oklahoma—State Highway Comsn., Lew Wentz, Chmn., Oklahoma City, let contracts for 2 roads: Richards and Mooreman, Box 565, Stroud, for .36 mi. grading, draining, Custer County, at \$7553; Schultz Construction Co., Alva, at \$15,304, for 6.7 mi. grading, draining, State Highway 42, south of Hopeton; has low bid from Schultz Construction Co., at \$28,312, for 4.9 mi. grading, draining, State Highway 64 west of Alva, Woods County.

Okla., Boise City—City let contract to S. S. Strong, Beaver, at \$67,000, for 3½-in. vit. brick paving, 25,000 sq. yd.

Tenn., Cookeville—City let contract to T. C. Jones, Athens, at \$16,544, for grading, draining, paving, Broad and Cedar St.

Tex., Austin—City, Adam R. Johnson, Mgr., let contract to Southwest Bitulithic Co., Littlefield Bldg., for 30-ft. 2-in. Warrenite bitulithic paving on 5-in. conc. base, W. 18th St.

Tex., Dallas—Central Bitulithic Co., Praetorian Bldg., has contract for Warrenite on 5-in. base paving, Winnetka, Jefferson and Chester St., at \$33,680.

West Virginia—State Road Comsn., George E. White, Sec., Charleston, let contracts for 2 bridge approaches, both Ritchie County: Ben Run bridge, Venable & Farkas, Morrison Bldg., Charleston, \$11,327; Beatrice bridge, Jones Construction Co., Farmington. 12-11

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported

Alabama—Bd. of Revenue, Jefferson County, Birmingham, reported, plans expenditure of about \$700,000 for sewerage line in Shades Valley, enlarging disposal plant, Bessemer, at cost \$201,000; also considering plan for construction sewer line from Homewood in Shades Valley to Shannon at cost of \$500,000; and disposal plant at Shannon. 11-20

Ala., Haleyville—Albert Lions, Rogersville, Tenn., has contract at \$23,300 for sanitary sewerage; 6, 8 and 10-in. clay and c. i. pipe; 3 disposal tanks; Robt. L. Totten, Engr., Brown-Marx Bldg., Birmingham. 12-18

Ark., Dumas—Town plans \$60,000 sanitary sewer system and disposal plant; install 3000 ft. of 15-in., 5073 ft. of 8-in., 33,290 ft. of 6-in. pipe and 2 lifting stations, 4 pumps and 4 motors and Imhoff tank; Frank R. Allen, Engr., Ark. Natl. Gas Bldg., Pine Bluff. 12-4

Ky., Louisville—Torsion Construction Co., Long Beach, Calif., reported, has contract at \$1,871,000 for completing first section of Southwestern Outfall sewer. 9-18

Ky., Winchester—City, J. M. Walker, C. E., will probably open bids Jan. 2 for 18 miles sanitary and 18 miles storm sewers; estimated cost \$180,000; install air compressor and drills; erect small addition to disposal plant. 12-18

La., Baton Rouge—G. J. Robinson Co., 2704 Linden St., Pine Bluff, Ark., reported, low bidder at \$191,358 for 22 mile sanitary sewers. 11-20

La., Bogalusa—City, reported, extend sewer system to Little Buffalo and other sections.

La., Donaldsonville—City, Sidney A. Marchand, Mayor, receives bids Jan. 26 for construction of complete sanitary sewer system. See Want Section—Bids Asked.

La., Ferriday—See Roads, Street and Paving.

La., New Orleans—J. M. McGowan, 1239 Joseph St., reported, has contract to furnish labor and material for casual and emergency needs for sewerage and water board during

1931 city accepted bid of United States Pipe and Foundry Company, 760 E. Pearl Street, Burlington, N. J., at \$134,435 to furnish c. i. pipe for Algiers discharge sewer main and for pressure transfer main on Lafitte Ave. and of Thomas H. Brockman Co., Canal Bank Bldg., at \$65,257 for construction work.

La., New Orleans—Following have contracts for water and sewer work: C. N. Pratt, Audubon Bldg., for Contract No. 106-W, alterations to pumping station C; United States Cast Iron Pipe & Foundry Co., Birmingham, Ala., Contr. No. 109-S, for furnishing c. i. pipe and fittings; Thos. H. Brockman, Canal Bank Bldg., for Contr. No. 110-S, laying sewage discharge main and pressure main. 12-4

La., New Orleans—Following additional contractors estimating on contract No. 116-D, extension of drainage pumping station No. 7, Florida Ave. and Orleans St., bids opened Dec. 30: Gervais F. Favrot, Balter Bldg.; John Riess, New Orleans Bank Bldg.; Caldwell Bros., 816 Howard Ave.; H. N. Moody, 815 Perdido St.; O'Brien Construction Co., Canal Bank Bldg.; R. F. Farnsworth & Co., Maritime Bldg.; C. W. O'Leary, 1519 Pine St.; H. W. Bond, 816 Howard Ave., all New Orleans; Sanitary Engineering Co., Grand Central Terminal Bldg., New York; Phillips & Davies, Kenton, O.; G. R. Fehr, Inc., 2755 S. 34th St., Milwaukee, Wis.; Carl John Stein, 116 E. Grand Ave., Chicago, Ill.; building will be 115x50 ft.; cost \$170,000; project includes excavation, sheet piling, crosotied material, steel bars, struc. steel, slate roof, c. i. piping, gate valves. 12-11

Md., Baltimore—City, Bureau of Sewers, receives bids Dec. 31 for sewers, Sanitary Contr. 273.

Md., Baltimore—Bd. of Awards receives bids Dec. 31 for sanitary sewers, Sanitary Contr. No. 273. See Want Section—Bids Asked.

Md., Baltimore—Frederick Iron Works, Frederick, low bidder at \$22,680 for iron castings.

Md., Bethesda—Montgomery County Bd. of Commrs., Rockville, reported, let contract to C. H. Matson, 12 Sherman St., Takoma Park, for storm sewers.

Mo., St. Louis—See Roads, Streets and Paving.

Mo., St. Louis—City plans expending \$500,000 for sewer in 1931, in addition to building of Sec. J, completing part of Sect. F, of River Des Peres project. 12-18

Okla., Blanchard—City defeated \$30,000 bond issue for sewers. 11-6

Okla., Tulsa—Link Belt Co., 910 S. Michigan Ave., Chicago, Ill., and Dorr Co., 247 Park Ave., New York, N. Y., reported, have contract for work on 2 sewage disposal plants; cost \$20,000 each; Allis Chalmers Mfg. Co., Milwaukee, Wis., and Standard Paving Co., 219 E. 11th St., have contracts for low lift pumping station, equipment and controlling switchboard. 12-18

S. C., Cayce—See Water Works.

S. C., Spartanburg—Southeastern Paving & Construction Co., Johnson City, Tenn., has contract at \$38,184 for constructing water and sewer system to serve Southern Shops area. 12-11

Tex., Beeville—Municipal Engineering Co., Athletic Bldg., Dallas, reported, has contract for \$15,000 sewage disposal plant.

Tex., Houston—City, reported, construct storm sewers on Luzon, and on Fulton Sts.; cost \$21,000.

Tex., Refugio—Kirkwood, Wharton & Lee, 517 N. Flores St., San Antonio, reported, has contract at \$42,322 for sewer improvements. 12-11

Va., Richmond—City, reported, plans 15 sewer projects including relief sewer for Sheppard St. area; about \$350,000 to be expended.

Va., Richmond—Streets Committee of City Council recommended bond issues for sewers, and paving. See Financial News Column.

Telephone Systems

Ark., Little Rock—First Church of The Nazarene, 824 Battery St., applied to Federal Radio Comsn., Washington, for construction permit to install new equipment.

Tex., Brownwood—Eagle Publishing Co., E. M. Wilson, reported, applied to Federal Radio Comsn., Washington, for construction permit to install new equipment.

Okla., Ardmore—Ardmore Publishing Co., reported, applied to Federal Radio Comsn., Washington, for permit for radio station.

Okla., Wapanucka—Southwestern Bell Telephone Co., St. Louis, reported, let contract to M. Miller & Shelton, Enid, at \$40,000 for repeater station; 1 story; brick; 60x50 ft. 11-20

Tex., San Benito—Rio Grande Valley Telephone Co., J. C. Paxton, Mgr., McAllen, reported, contemplates erection of telephone building; plans ready about March.

Tex., Sherman—Southwestern Bell Telephone Co., St. Louis, Mo., reported, construct \$45,000, 2 story, brick and conc. repeater station at Luella; Gibbs & Sons Co., Contr., Sherman, has contract for plumbing; Busby Electrical Co., 4004 Main St., Dallas, for electrical equipment; later houses for employees will be erected on 2 acre site; work is part of \$46,000,000 construction program to cover 5 yr. period; has completed underground cable system from Oklahoma City, Okla., to Dallas.

Va., Newport News—Hampton Roads Broadcasting Corp., Hotel Warwick, installing complete 100 watt RCA transmitter, purchased from RCA Victor Co., New York. 12-18

Va., Tenn., Bristol—Inter-Mountain Telephone Co. erecting \$20,000 addition to plant on Sixth St.; install repeater station; Glover & Caldwell, Bristol, Contrs.

Textile Mills

N. C., High Point—Melrose Hosiery Mills, Charles L. Amos, Propr., 1543 English St., reported, acquired and will transfer here the seamless hosiery manufacturing equipment of Griffin Hosiery Mills, Griffin, Ga.; will install in Plant No. 2.

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification

Ala., Mobile—City, reported, let contract to Central Foundry Co., Holt, at \$67,051, for c.l. pipe for extension of water works; construction of project to be started at once. 10-30

Fla., St. Augustine—City, reported, voted against proposal to transfer water works plant to private ownership. 11-27

Ga., Augusta—City will lay water main from city distribution system to Circular Court property. 12-11

La., Jackson—City, reported, defeated \$20,000 water works bonds. 11-27

Md., Baltimore—City, Bureau of Water Supply, receives bids Dec. 31 for manhole covers and frames and for 200,000 lbs. pig lead; E. G. Rost, Water Engr. 12-11

Md., Curtis Bay, Baltimore—D. M. Andrew Co., 26th and Sissons Sts., low bidder at \$74,500 for masonry wall, tank enclosure at water tank. 12-11

Md., Pikesville, Baltimore—City, Bureau of Water Supply, receives new bids Dec. 31 for automatic pumping station. 12-4

Mo., Cape Girardeau—City, reported, voted negatively on franchise for Missouri Utilities Co., Planters Bldg., St. Louis. 12-11

Mo., St. Joseph—City, reported, considering establishment of water system; H. D. Judson, City Engr. 12-11

Okla., Holdenville—J. J. Votaw, Holdenville, reported, has contract at \$35,000 for riprap, intake tower and spillway for water works; W. E. Roberts, Holdenville, at \$15,000 for pump station. 12-11

Okla., Oklahoma City—City defeated bonds for water works improvements, sewers, purchase of park property, etc. See Financial News Columns. 11-27

S. C., Cayce—Town, R. C. Allen, Mayor, defeated \$55,000 bonds for water and sewers; will probably call for new election. 12-11

S. C., Denmark—City, C. M. Cox, Clk., receives bids Jan. 1 for purchase of deep well pump. See Want Section—Bids Asked.

S. C., Spartanburg—See Sewer Construction.

Tex., Dripping Springs—Chamber of Commerce, C. O. McCarty, reported, started construction of 1 of series of 4 low water dams in Onion Creek; create lake 2221 ft. long and 150 ft. wide with depth of 12 ft.

Va., Charlottesville—City having survey made for water improvements; considering advisability of dam at Moormans River to provide storage site; will have water area of 70 acres, with face of dam 50 ft. high; storage capacity 500,000,000 gal.

Va., Gordonsville—City, J. H. Stratton, Mayor, enlarging water system; completed excavation for storage basin of 500,000 gal. capacity.

FIRE DAMAGE

Ala., Mobile—Plant of Transit Lumber and Mill Co. on Three Mile Creek.

Ark., Egypt—Farmers Cotton Gln, owned by Drew Salmons, Jonesboro; loss \$10,000.

Ark., Magnolia—Masonic Bldg.; loss \$25,000.

Ark., Walnut Ridge—Rankin Bldg. on W. Second St., occupied by Lee Rankin grocery and Ed Rankin hardware store on first floor and armory of Company K, National Guard on second floor; loss \$20,000.

Ark., Warren—Main building of Warren High School; address School Board.

Fla., Jacksonville—H. E. Friend's 2 buildings at Ironton.

Fla., Pensacola—Temple Bethel-El Synagogue, E. Chase St.; address The Rabbi; 2 storage plants; garage; loss \$100,000.

Ga., Leslie—Rev. C. E. Rodgers' residence.

Ga., Hazelhurst—Hazelhurst Hotel, J. E. Alderman, Operator; Mrs. E. H. Wooten's residence.

Md., Hancock—Wm. Pryor's residence near Hancock.

Md., LaPlata—Matthews-Howard Co.'s mill.

Miss., Booneville—Jumpertown High School; loss \$10,000; address Prentiss County High School.

Miss., Ellisville—Vaughn Brothers' store.

Miss., Hattiesburg—B. M. Cook's residence, Columbia Rd.

Miss., Terry—J. W. Gratham Mercantile Co.'s store; loss \$28,000.

Mo., Houston—Texas County court house; loss \$60,000.

Mo., Kansas City—Building owned by T. H. Mastin & Co., 1907 Grand St., and occupied by Kelley-Freeman Motors, Inc., 1900 McGee St.; loss \$75,000.

N. C., Durham—Dr. R. L. Felts' residence, 110 Buchanan Blvd.; loss \$10,000 to \$15,000.

N. C., Stantonsburg—Dr. S. H. Crocker's residence; loss \$25,000.

N. C., Hendersonville—Carolina Terrace Hotel, owned by Mrs. C. B. Wooten, 2401 Divine St., Columbia, S. C., and Hendersonville; loss \$100,000.

N. C., Wilmington—Building, Dock and Front Sts., occupied by A. H. Morris, W. M. Edwards and A. Abrams; loss \$30,000.

N. C., Wilmington—Edwards grain store; Morris Hardware Co.'s store; Goldstein Dry Goods Store, all Front St.

Okla., Bartlesville—H. M. Hamilton's residence, Dewey Rd.; loss \$20,000.

Okla., Olustee—Famous Dry Goods Store; loss \$30,000.

S. C., Van Wyck—Van Wyck Gln, owned by Massey Yoder Co.

Tex., Celeste—Lumber yard of Lyon-Gray Lumber Co.; loss \$25,000.

Tex., Paris—Pete Humphries Co.'s store; loss \$40,000.

Va., Altavista—Martin's Cafe, Charlotte Ave. and Main St., operated by Noah Martin.

Va., Lynchburg—J. C. Penney Co.'s store and plant of McGehee Millner Overall Co., 11th and Main Sts.; loss \$135,000.

Va., Lynchburg—Woodworking plant of Adams Brothers-Payne Co., 1760 Park Ave.; loss \$50,000.

Va., Scottsville—Kent Hotel; White & Co.'s store; W. E. Moon's store; loss \$10,000; Stanley Weldner's residence, west of Scottsville; \$15,000.

W. Va., Parkersburg—W. C. Nohe Bldg. at Vitrolite, occupied by Junior Order of United American Mechanics hall, Vienna-Paris Style Shoppe, Rollison Shoe Repair Shop, apartments on second floor.

W. Va., Pullman—W. M. Drummond's store and post office; Wm. Stout's store; Clifton Loudin's store; loss \$27,000.

W. Va., Wheeling—Five garages owned by Silatio Zoencenella, 222 17th St.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Fla., Tampa—Young Women's Christian Assn. ready in few days for bids for \$100,000 bldg.; bids to be opened in about 2 weeks; brick and tile, conc. foundation, stone trim, 7 stories, first 2 floors 42x100 ft., remainder 42x42 ft., tar and gravel roof; dormitory accommodate 60; M. Leo Elliott, Archt., 706 Franklin St. 10-23

Fla., Titusville—Titusville Post No. 1, American Legion, L. C. Stewart, member, plans clubhouse near Titusville.

Tex., Laredo—American Legion, Leon Shapu, Commdr, erect \$10,000 bldg.; stucco, 2 stories, 30x72 ft.; Guy Trout, Archt.

Bank and Office

D. C., Washington—1726 I St., Inc., care Thos. B. Lawler, 16 Jackson Place, reported, erect 8-story professional bldg.; steel, conc., brick, stone trim, marble and terrazzo work, hot air heating and cooling plant, slag roof; Carroll Beale, Archt.-Engr., 819 15th St.

Okla., Oklahoma City—W. S. Key purchased Gladish Bldg., Third St. and Harvey Ave.; plans to remodel and erect additional floors; tentative plans call for 7 stories, cost \$500,000; work to be based on survey of office space needs; plans for immediate improvement call for additional elevators, installation of black onyx wainscoting, lowering of ceilings, etc.

Okla., Oklahoma City—Oklahoma City Building & Loan Assn., W. R. McWilliams, Vice Pres.-Mgr., 1916 W. 18th St., purchased bldg., 16-18 W. Main St.; remodel after Jan.

Okla., Tulsa—Tulsa Public Health Assn. erect 2-story brick and stone bldg., Eighth St. and Peoria Ave.

Churches

Ark., Bentonville—Methodist Church, Rev. R. S. Hayden, Chmn., Bldg. Comm., erect annex; 2 stories and basement; A. O. Clark, Archt., Rogers; tentative plans complete.

Ark., Ola—Methodist Church plans building.

D. C., Washington—St. Anthony's Chapel, Rev. P. E. Conroy, Pastor, has permit for struct. repairs to bldg., 12th and Lawrence Sts., N. E.; \$10,000.

Okla., Oklahoma City—Protestant Episcopal Bishop of Oklahoma, Rt. Rev. Thos. Casady, 608 E. 18th St., Oklahoma City, reported, announced plans for \$10,000,000 cathedral, to be called All Saints', on 30-acre tract in northeast section of city; Gothic type, about 400 ft. long, tower 350 ft. high; outdoor auditorium to seat 15,000; work on first unit probably start early in 1931.

Tenn., Memphis—McLean Baptist Church, Rev. D. A. Ellis, Pastor, 329 N. McLean St., considers erecting \$75,000 brick and rein. conc. bldg., Jackson Ave. and N. McLean Blvd.

Tex., Houston—Park Place Baptist Church, 3801 Broadway, opens bids Dec. 29 for \$25,000 bldg., Broadway and Kingsley St.; brick and tile, 2 stories and basement.

Tex., Houston—Central Park Methodist Church erect \$20,000 Sunday school; 2 stories and basement.

Tex., Houston—Magnolia Park Baptist Church about ready for bids for Sunday school, 71st St. and Avenue F; brick and tile, 3 stories, \$20,000.

Tex., San Antonio—National Shrine of St. Anthony, Rev. Peter M. Baque, Pastor, plans to start work in about 2 months on \$1,000,000 Shrine north of Alamo Heights; first unit to consist of "New Alamo" church bldg., replica of the Alamo; basilica with two 180-ft. towers as second unit; brick, rein. conc., stone finish, stone stairs; basilica 220x112 ft.; cloisters; 5 chapels; 70-ft. nave; F. B. Gaenslen, Archt., 927 Navarro St.; Lilly-Drought, Supvy. Engr., Frost Bldg.

City and County

Ga., Macon—Bibb County Bd. of Commrs. prison camp comm., L. A. Thomas, member, will receive plans and estimates from architects Jan. 6 for prison camp, Columbus Rd.; probably \$25,000 to \$30,000, accommodate 150 to 200; also receive plans and estimates same date for machine shop.

La., Crowley—City selected Wm. T. Nolan, Canal Bk. Bldg., New Orleans, as architect for \$60,000 to \$70,000 city hall auditorium. 12-4

La., New Orleans—City Purchasing Agt., Room 24, City Hall, receives bids until Jan. 6 for window shades and curtains for criminal courts and parish prison bldg.; specifications from Diboll & Owen, Ltd., Archt., Canal Bk. Bldg. 2-6

Md., Baltimore—Bureau of Buildings, City Hall, has low bid at \$2,044,000 from George A. Fuller Co., Munsey Bldg., Washington, D. C., for Enoch Pratt Free Library; Clyde N. & Nelson Friz, Archts., Lexington Bldg., Baltimore; Edw. L. Tifton and Alfred Morton Githens, Const. Archts., both 141 E. 45th St., New York; C. L. Reeder, Mech. Engr., 915 N. Charles St.; H. F. Doeleman, Struct. Engr., 510 N. Charles, both Baltimore. 12-11

Miss., Columbus—Lowndes County Bd. of Supvrs., John J. Richards, Clk., receives bids until Jan. 8 for bldg. on county farm.

Mo., Eldon—City, E. H. Austin, City Clk., having plans drawn by Saylor & Payson, 505 Interstate Bldg., Kansas City, for \$17,000 brick city hall; 2 stories; 54x65 ft. 11-13

Mo., Houston—Texas County Bd. of Comms. may call election on bonds to rebuild court house noted burned at \$60,000 loss.

Mo., St. Louis—Board of Public Service, O. D. Tillay, Sec., call for bids in spring for \$100,000 bath house for negroes, Jefferson and Adams Sts.; brick and conc., 1 story and basement, 82x116 ft.; 35x75-ft. swimming pool; about 290 lockers; F. A. Updegraff, 329 Municipal Court Bldg., 14th and Market Sts.; preliminary plans complete.

N. C., Jackson—Northampton County Bd. of Comms. receives bids Jan. 5 for alterations and additions to jail; separate bids for cell work; plans from Eric G. Flannagan, Archt., Henderson.

Okla., Oklahoma City—City defeated \$8,800,000 bond issue, including amounts for convention hall, city hall, Fair Park improvements, comfort stations, city detention hospital, fire stations and equipment, and municipal garage and fire station. 12-11

Okla., Pryor—City will vote on \$35,000 bath house bonds.

Okla., Tulsa—City selected Leon Senter of Smith & Senter, Philtower Bldg., as architect for central fire alarm station.

Tex., Beaumont—Jefferson County Bd. of Comms. receives bids until Jan. 19 for jail equipment and court house furnishings for \$1,000,000 court house under constr.; Fred A. Stone, Goodhue Bldg., and A. Babln, Perlstein Bldg., architects; McDaniel Bros. Constr., Kyle Bldg. 12-4

Tex., Cotulla—LaSalle County, Geo. Welhausen, County Judge, opens bids Jan. 12 for courthouse and jail; separate bids for heating, plumbing, wiring and jail work; brick, tile, rein. conc., marble and stone, 4 stories and basement, jail on top floor; \$150,000; Henry T. Phelps, Archt., Hicks Bldg., San Antonio. 11-27

Dwellings

D. C., Washington—Frank D. Phillips, 3600 Morrison St., N. W., has permit for 2 brick dwellings, 5318 Nebraska Ave., N. W., and 5331 Nevada Ave.; plans by owner; 2 stories; \$18,000.

D. C., Washington—Mrs. G. Stewart, Easton, Md., receives bids Dec. 27 for residence, 16th St. near Fuller St.; stone, 4 stories, slate and tin roof, hardwood floors, tile baths, ornate iron, indirect heating system; Geo. Oakley Totten, Archt., 808 17th St., Washington; Andrew Murray, 729 12th St.; Wm. P. Lipscomb Co., 1406 G St.; DeSibour Construction Co., 200 9R St.; Bruce E. Clark, 1610 19th St., all Washington, estimating.

D. C., Washington—Saml Lynn, care A. H. Sonnemann, 24100 Sixteenth St., N. W., receives bids Dec. 27 for \$35,000 residence, Brookside Drive and Chamberlain St., Kenwood; stone, 2½ stories, tile baths, oak floors, slate roof; Frank L. Wagner, Inc., 10 L St., S. E., estimating.

D. C., Washington—Morris Yockelson, 918 Farragut St., N. W., has permit for \$10,000 residence, 2701 Good Hope Rd., S. E.; 2 stories, brick.

D. C., Washington—J. E. Fox, 5908 16th St., erect 3 brick and cinder block dwellings, S. Dakota Ave., N. E.; 2 stories, 60x32 ft.; \$30,000; Paul Fox, Archt., 838 Delafield Place, N. W.

Fla., Miami Beach—J. M. Livingston, 310 S. Michigan Ave., Chicago, Ill., and 225 37th St., Miami Beach, probably call for bids soon after Jan. 1 for residence and garage,

Flamingo Drive and 30th St.; stucco, rein. conc. and conc. block, ornate stone and iron, steel sash, tile and wood floors, tile roof, hot water heat, lawn sprinkler system; A. Fraser Rose, Archt.-Engr., 537 Collins Ave., Miami Beach; revising plans.

Fla., Vero Beach—E. G. Tillotson, Guardian Bldg., Cleveland, O., postponed erection of \$20,000 residence, Riomar; W. Norman Jeavons, Archt., 2505 Arlington Rd., Cleveland Heights, Ohio.

La., New Orleans—Mrs. Walter J. Jung receives bids Dec. 26 at office Weiss, Dreyfous & Seiferth, Archts., Maison Blanche Bldg., for 2-story frame residence, Walnut St. near Garfield St.; 50x40 ft.; 2 tile baths, oak and rubber floors.

La., New Orleans—Robt. E. Smith, 131 N. Rochelave St., erect number dwellings, Lakeview development.

La., New Orleans—Mrs. Claire Monnin purchased homesite, De Montluzin and Selma Sts., Gentilly Terrace.

Md., Baltimore—John A. Payne, Bldr., 3313 Westerwald Ave., erect \$10,000 frame dwelling, Stoneleigh; 8½ stories, 30x35 ft.

Md., Middle River—Robt. Holnick, care Bernard Evander, Archt., 20 E. Lexington St., Baltimore, erect cinder block and stucco residence; 2 stories and basement, 28x44 ft.; ready for bids about February.

N. C., Paw Creek—Kendall Mills erect 23 dwellings; also erect 38 dwellings at Newberry, S. C.; total cost \$152,500; bids in.

N. C., Charlotte—John L. Stickley, Commercial Bank Bldg., erect stucco residence; J. M. McMichael, Archt., Selwyn Ave. ext.; bids in.

Okla., Broken Bow—First Presbyterian Church, Joe Hawley, member, raising funds for parsonage.

S. C., Newberry—See N. C., Pan Creek.

Tenn., Memphis—A. Y. Pearson, Derron Bldg., erect \$15,000 brick veneer residence, 2826 Central Ave.; 2 stories, tile baths, hardwood floors, comp. roof; owner builds.

Tenn., Memphis—J. F. Hunter, 1865 Jackson Ave., erect \$13,000 residence; brick veneer, 1 story, 69x73 ft.; Geo. Mahan, Jr., Archt., Manhattan Bank Bldg.; R. F. Howell, Contr., 2561 Hale St.

Tenn., Memphis—M. H. Stuart, Parkview Hotel, erect brick residence, Red Acres; 2 stories, tile baths, hardwood floors, comp. or tile roof; Raymond B. Spencer, Archt., Court Sq. Bldg.; preliminary plans.

Tenn., Memphis—B. E. Berry, Fidelity Bk. Bldg., erect 2 brick veneer dwellings, Pershing and Baltic Sts.; 1-story, 32x33 ft., tile baths, hardwood floors, comp. roofs; \$10,000; plans complete.

Tex., Austin—Rev. H. N. King erect frame and brick veneer duplex; 1 story, about 40x60 ft., oak and pine floors, comp. shingle roof; Will N. Noonan Co., Archt., Bldrs. Exch. Bldg., San Antonio; plans completed about Dec. 25. Address Owner.

Tex., Harlingen—J. E. Wilson, Winnipeg, Manitoba, Canada, Joe Cunningham, Agt., Harlingen, purchased 26 lots, Lincoln addition; plans 20 dwellings, paving.

Tex., San Antonio—Gilbert G. Wright, Jr., 905 W. Augusta St., erect residence, Milton and Eldon Aves., Terrell Hills; Robt. B. Kelly, Archt., Milam Bldg.

Tex., Weslaco—W. O. Connally, Brownsville, has low bid at \$10,700 from J. N. Meeks, Harlingen, for residence; Wm. D. Van Sicken, Archt., Brownsville.

Government and State

Ala., Fort McClellan, Anniston—Following have received plans on hospital and utilities, Fort McClellan, bids Jan. 5 by Constructing Quartermaster, Lieut. O. E. Davis: General Constr.—W. F. Jackson Co., Inc.; Johnson Construction Company, 510 North Fifth Street; A. J. Honeycutt Company, 2512 Eighth Court, North, all Birmingham, Ala.; Rogers & Leventhal, Box 173; D. F. Brandon, 1102 James Bldg., both Chattanooga, Tenn.; J. S. McCauley Co., Inc.; A. K. Adams & Co., both Atlanta, Ga.; Upchurch Construction Co., Box 368; Samford Bros., Inc., 301 Washington Ave.; Algernon Blair, First Natl. Bank Bldg., all Montgomery, Ala.; Ogletree Construction Co.; Duke-Stickney Construction Co., both Anniston; Batson-Cook Co., West Point, Ga.; Motes & Vardaman, Sylacauga, Ala.; Worsham Bros., Empire Bldg., Knoxville, Tenn.; Rosen & Fischel, 11 S. LaSalle St., Chicago, Ill.; H. G. Whittenberg, 218 Citizens Bldg., Louisville, Ky.; W. F. Thurston Co., Box 2089, Richmond, Va.; J. M. Raymond Construction Co., 418 Hildebrandt Bldg., Jacksonville, Fla.; other estimators are: Service Co., Inc., 1520 First Ave., Columbus, Ga.; Crane Co., 1225 I St., N. W., Washington; Hart Enterprise Elec-

trical Co., 826 Baronne St., New Orleans, La.; Kewanee Boiler Corp., Kewanee, Ill.; McSt., Mobile, Ala.; Perry & McDonald, 317 Phillips Manufacturing Co., foot of Lawrence Dexter Ave., Montgomery, Ala.; Michael Supply Co., Barry Plumbing & Heating Co., Box 224, both Talladega, Ala.; Klepsig Plumbing & Heating Co., 20 W. Tenth St.; Booth & Kilby, Inc., 26 W. Tenth; Kilby Car & Foundry Co.; Anniston Lumber Co.; Anniston Hardware Co., all Anniston; Bagby Elevator & Electric Co., 3115 Third Ave., Birmingham, Ala.; Decatur Cornice & Roofing Co., Avenue A and Second St., Decatur, Ala.; International Steel & Iron Co., Evansville, Ind.; Acme Building Supply Co., Meridian, Miss.; Crescent Steel Co., 120 E. Loughborough Ave., both St. Louis. 12-11

Ala., Maxwell Field, Montgomery—Constructing Quartermaster, Capt. M. A. McFadden, receives bids until Jan. 16 for paint, oil and dope warehouse; maintenance shop; warehouse; garage; all at Maxwell Field; plans from above. 12-18

Ala., Maxwell Field, Montgomery—Constructing Quartermaster, Capt. M. A. McFadden, has low bid at \$121,700 from Batson-Cook Co., West Point, Ga., for 9 double sets of officers' quarters and garages. 11-27

Miss., Bonita—Oak Grove Baptist Church, Rev. T. B. McPheeters, Pastor, erect \$20,000 bldg.; 1 story and basement; P. J. Krouse, Archt., M. & W. Bldg., Meridian. 12-18

Miss., Meridian—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site, 21st Ave. and Ninth St., for post office. 7-31

Mo., St. Louis—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected Mauran, Russell & Crowell, Chemical Bldg., St. Louis, as architects for \$3,500,000 Federal Bldg., 12th and Market Sts. 12-8

N. C., Salisbury—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Jan. 13 for extension and remodeling (except elevators) of post office; rein. conc., brick and tile, stone work, 3 stories, slate and comp. roof, \$175,000. 12-4

Okla., El Reno—Department of Justice, Bureau of Prisons, Sanford Bates, Washington, D. C., will locate \$3,000,000 dormitory type Federal reformatory at Fort Reno; fireproof, about 15 bldgs., character and cost of construction not yet determined; architects not selected; 19-30 under D. C., Washington.

Tenn., Chattanooga—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected property, Georgia Ave., as site for post office. 11-21-29

Tex., Fort Sam Houston, San Antonio—Constructing Quartermaster, Capt. H. B. Nurse, Acting Constructing Q. M., has low combined bid at \$366,960 from A. J. Rife, Dallas, for 16 sets of officers' quarters and 16 sets non-commissioned officers' quarters, Fort Sam Houston. 11-20

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, receives bids until Jan. 15 for 17 company officers' quarters; Spanish type, masonry, 2 stories; \$212,500 available; John M. Marriott, Archt., Frost Natl. Bk. Bldg. 12-11

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, having plans drawn by Marvin Eickenroht & Bartlett Cocke, Maverick Bldg., San Antonio, for \$48,000 elementary school; cast stone, struct. clay tile and stucco, 1 story, 105x210 ft., U shape, 8 classrooms, rein. conc., wood, tile and cement floors, tile roof; plans ready about Jan. 15. 12-18

Va., Hampton Roads, Norfolk—Additional prospective estimators on barracks, Hampton Roads Naval Training Station, bids Jan. 7 by Navy Dept., Bureau of Yards and Docks, Washington, D. C.: Hallbauer-LaBahn, Inc., 844 Rush St., Chicago, Ill.; N. C. Nelson, Inc., 853 Broadway; Baber-Comeau & Co., Inc., Grand Central Terminal, both New York; Westinghouse Electric & Manufacturing Co., Washington Bldg.; Truscon Steel Co., Hill Bldg., both Washington; W. F. Martens, P. O. Box 126, Hampton, Va.; W. H. Bond Co., Inc., 318 S. Harrington St., Raleigh, N. C.; Warner Elevator Co., 2613 Spring Grove Ave., Cincinnati, O. 12-18

Va., Langley Field, Hampton—Constructing Quartermaster, Fort Monroe, Capt. Geo. H. Schumacher, receives bids Jan. 15 for one 163-men barracks, two 200-men barracks and one 300-men barracks, Langley Field. 9-11

Va., Portsmouth—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Dec. 31 for elevators for post office; following prospective estimators: S. Heller Elevator Co., 248 Milwaukee St., Milwaukee, Wis.; A. B. See Elevator Co., 1343 H St., N. W.; New Era Elevator & Machine Co., 611 C St., N. W.; Otis Elevator Co., 810 18th St., N. W., all Washington; Westbrook Elevator Manufacturing Co., Inc., Spring St., Danville, Va. 12-11

W. Va., Weston—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected Bank and Center Sts. as site for post office. 8-7

Hospitals, Sanitoriums, Etc.

Ark., Harrison—Dr. John C. Marshall, 709 S. Jackson St., and Dr. Ivan McKinzie, both Tulsa, reported, consider erecting \$80,000 to \$90,000 hospital; fireproof, brick and conc., 2 or 3 stories and basement, 30 to 40 beds.

Ark., Benton — Arkansas Construction Comsn., Jos. M. Hill, Chmn., Little Rock, has low bid at \$340,000 from Wm. Peterson, Donaghey Bldg., Little Rock, for first unit, 6 bldgs., for \$3,250,000 State Hospital for Nervous Diseases; question of water supply may delay award of contract; Mann, Wanger & King, Archt., New Donaghey Bldg., Little Rock; Sullivan W. Jones, Consit. Archt., 25 W. 45th St., New York; Lund Engineering Co., Engrs., Home Ins. Bldg., Little Rock. 11-20

Ark., McCrory — Woodruff County, Alex McGregor, County Judge, considers selling present hospital and erecting new bldg. near McCrory.

Md., Baltimore — Johns Hopkins Hospital, Dr. Winford Smith, Supt., having tentative plans prepared by Office of Joseph Evans Sperry, Calvert Bldg., for Hurd Memorial lecture hall; 1 story, brick and stone, \$150,000.

Md., Perry Point—United States Veterans Bureau, L. H. Tripp, Ch. Constr. Div., Room 764, Arlington Bldg., Washington, D. C., receives bids in triplicate until Feb. 3 for N. P. convalescent bldg., U. S. Veterans Hospital, including walks and grading; work includes excavating, rein. conc. constr., brick work, hollow tile, cast stone, marble work, floor and wall tile, linoleum floors, rubber tile, compressed asphalt tile, terrazzo base, iron work, steel sash, steel stairs with slate treads, steel clothing bins, slate and built-up roofing, roof ventilators, metal lathing, plastering, stucco, sound deadening, metal weatherstrips, insect screens, plumbing, heating, elect. work, and outside sewer, water, steam and elect. service connections; separate bids for elect. elevator; \$300,000; drawings from Constr. Division. 10-23

Md., Perry Point—United States Veterans Bureau, Arlington Bldg., Washington, D. C., has low bid at \$15,880 from Chicago Bridge & Iron Co., 1015 Chestnut St., Philadelphia, Pa., for tank and tower, U. S. Veterans Hospital.

Miss., Jackson—Following contractors estimating on 12 bldgs., State Hospital for Insane, Rankin County, bids Jan. 2 by Mississippi Building Comsn.: Wetmore Construction Co., 867 E. Mississippi St.; C. N. Flower, care Tower Building, both Jackson, Mississippi; Brookhaven, Miss.; Oden & Glenn, Carter Bldg., Hattiesburg, Miss.; Gauger-Korsmo Const. Co., Fidelity Bank Bldg.; W. G. Jones, 269 N. Narcissus St.; Robt. C. Crouch Co., 63 S. Third St., all Memphis, Tenn.; L. W. Hancock, Meridian, Miss.; Tom Wilmoth, Camden, Ark.; M. T. Reed Construction Co., Belzoni, Miss.; Grahn Construction Co., Red Rock Bldg., Atlanta, Ga.; Key Langston Construction Co., Murray, Ky.; Sumner-Sollitt Co., 307 N. Michigan Ave., Chicago, Ill.; W. S. Salley, Onachita Bank Bldg., Monroe, La.; Dye & Mullin, Columbia, Miss.; Keeton & Fairley, Hattiesburg; W. E. Rubush, P. O. Box 3102, Tampa, Fla.; Garber & Lewis, Jackson, Miss.; Currie & Corley, Raleigh, Miss.; W. S. Rutter, and Lee McDavitt, both Brookhaven, Miss., estimating on epileptic and patient cottage; G. F. Hayes & Son, Union, Miss., estimating on patient cottage; other estimators are Smith-Pew Construction Co., 435 Irvin St., N. E., Atlanta, Ga.; Hamilton & Barber Construction Co., Memphis, Tenn.; Fiske-Carter Construction Co., Greenville, S. C.; N. W. Overstreet, Archt., Standard Life Bldg., Jackson, instructed to proceed with plans for remainder of buildings. 12-11

Tex., Galveston—Sealy & Smith Foundation, Dr. Edw. Randall, Chmn., Bldg. Comn., probably start work in March on \$400,000 nurses' home, John Sealy Hospital; brick and rein. conc., 3 and 4 stories, roof garden and 2 towers, Y shape; R. L. White, Archt., University of Texas, Austin. 6-12

Hotels and Apartments

D. C., Washington—Lee Properties, Inc., 1518 K St., N. W., having plans prepared by Frank Tomlinson, 1518 K St., N. W., for 8-story, 140x120 ft., brick, conc., hollow tile and stone apartment, 16th St. and Columbia Road; slag roof, steam heat.

Fla., Miami Beach—Wm. F. Brown, Archt., 651 Washington Ave., preparing plans for hotel.

La., Baton Rouge—Hotel Heidelberg, reported, erect \$200,000 addition; if addition

is built, plans will probably be prepared by Edw. F. Neild, Archt., City Bank Bldg., Shreveport.

Miss., Bay St. Louis—Mrs. D. H. Doyle selected E. E. Norwood, Gulfport, to prepare plans for rebuilding Tulane Hotel recently destroyed by fire at loss of \$25,000.

Mo., St. Joseph—Atlas Realty & Development Co., Dennis Flynn, Sec., temporary address in Building Industry Club, promoting erection of Faust Hotel, Ninth and Edmond Sts., approved plans by Ellis Charles, Wichita, Kans., for \$500,000, 11-story hotel. 12-18

Mo., St. Louis—G. L. Loeffler, care Chas. R. Greene, Archt., Wainwright Bldg., soon ready for bids for 2-story and basement, 27x52 ft., brick, 2-apartment building, 3900 block Wilmington Ave., Holly Hills; rubble stone foundation, asbestos and comp. shingle roof, hardwood and terrazzo floors, hot water heat.

Tenn., Memphis—W. F. Fay has permit for \$10,000, 2-story brick apartment, 796 S. Main St.

Tex., San Antonio — Baker Hotels, Inc., Gunter Hotel, plans remodeling St. Anthony Hotel, Travis St., and erecting 25-room, fireproof addition.

Va., Natural Bridge—Natural Bridge Hotel, J. D. Clothier, Mgr., remodel hotel and erect dance pavilion; install fire sprinkler.

Miscellaneous

Md., Baltimore — Bickford Lunch System, Inc., 4 W. Fayette St., leased building, 423 N. Howard St., and expend \$10,000 for improvements, equipment, etc.; Wm. J. Dengehardt, Archt., 1305 N. Charles St.

Md., Frederick — Ernest D. Michael, Dr. James A. Long and others remodel and erect addition to 3-story, 25x196 ft. building, 28 W. Patrick St., for bowling alley and apartments.

Md., Hagerstown—Reformed Church of Potomac Synod plans Home for Aged in Hagerstown or Washington County; Rev. Dr. Scott R. Wagner, Pres., Bd. of Trustees, Hagerstown. 9-18

N. C., Hatteras—G. Albert Lyon, of Allenhurst, N. J., member of Gooseyville Gunning Club at Hatteras Inlet, donated \$10,000 for club building and library for girls.

Tex., Corpus Christi—Colonial Beach Club, Robert L. Harrell, Dr. George T. Lusk, Medical-Professional Bldg., and associates having plans prepared by J. Gordon Wells, for resort and hotel development on Padre Island; project includes 3 main buildings and 36 detached cottages; center group to include 2-story clubhouse with 2-story wings on each side for 32-room hotel; on lagoon side of Padre Island, approx. one mile from club, will be located hunting and fishing lodges, buildings for storage of hunting and fishing equipment and quarters for guides; pier is to be constructed into lagoon.

Schools

Ark., Coal Hill—Coal Hill Special School Dist., E. T. Vardamen, Pres., having plans prepared by Haralson & Nelson, Merchants Bank Bldg., Fort Smith, for \$20,000, 1-and 2-story, brick and conc. school.

Ark., Hope—School Bd. receives bids Jan. 6 for \$125,000, 3-story, brick, stone and conc., 25-classroom high school; separate gymnasium and auditorium; Petter & McAninch, Archts., Pyramid Life Bldg., Little Rock. 10-2

D. C., Washington—District Comms., Maj. H. L. Robb, Asst. Engr., Commr., Dist. Bldg., purchased site, 37th and Tilden Sts., N. W., and submitted estimate to Congress requesting appropriation of \$140,000 to cover cost of plans, building and improvement of grounds; tentative plans call for 8-room extensible building costing about \$108,000; A. L. Harris, Municipal Archt., Dist. Bldg.; ready for bids about Sept., 1931. 12-18

D. C., Washington—Following contractors estimating on \$120,000, 2-story, brick and stone, 8-room addition and remodeling Whit-tier School, bids Jan. 6 by District Comms., 509 Dist Bldg.: C. A. Hofferberth, 1406 G St., N. W.; E. E. Ward & Son, 3563 11th St., N. W.; Bahen & Wright, 916 Rhode Island Ave., N. E.; Loudoun-Rust Co., 1406 G St., N. W.; Graham Construction Co., Washington Bldg.; W. E. Mooney, 2539 Pa. Ave., all Washington; North-Eastern Construction Co., 6 W. Madison St., Baltimore; J. K. Thurston Co., 101 Park Ave., New York; plans by A. L. Harris, Municipal Archt. 12-18

D. C., Washington—Following contractors estimating on \$200,000, 2-story and basement, brick, stone, fireproof addition to An-

thony J. Bowen School, bids Jan. 9 by District Comms., 509 Dist. Bldg.: North-Eastern Construction Co., 6 W. Madison St., Baltimore; Loudoun-Rust Co., 1406 G St., N. W.; Bahen & Wright, 916 Rhode Island Ave., N. E.; English Construction Co., 1318 H St., N. W., all Washington; A. L. Harris, Municipal Archt. 11-27

D. C., Washington—District Comms., Roland M. Brennan, Dist. Bldg., have low bid at \$185,490 from Fidelity Construction Co., 1218 Randolph St., N. E., for athletic field at McKinley High School; A. L. Harris, Municipal Archt., Dist. Bldg.

Fla., Miami—Dare County Bd. of Public Instruction, H. H. Filer, Chmn., selected Geo. L. Pfeiffer, 1104 Biscayne Bank Bldg., and E. L. Robertson, 219 Calumet Bldg., as Asso. Archts. for agricultural high school, N. W. 2nd Ave. at 62nd St.; \$100,000, auditorium to seat 1250 to 1500 people.

Ga., Valdosta—Emory University, Dr. Harvey Cox, Pres., having preliminary plans prepared by Ivey & Crook, Candler Bldg., Atlanta, for \$50,000, 2-story, 40x80 ft., brick, stone trim dormitory, slate or comp. roof. 12-18

Ga., Thomasville—Bd. of Education, B. B. Broughton, Sec., having plans prepared by Lockwood & Poundstone, Marietta Bldg., Atlanta, for \$25,000, 1-story and basement, brick veneer school; comp. roof.

Ky., Anchorage—Catholic Diocese of Louisville, Bishop John A. Floersch, Louisville, considering erecting \$500,000 to \$750,000 institution on 220-acre site recently purchased near Anchorage.

La., Baton Rouge—Louisiana State University, Dr. J. M. Smith, Pres., ready for bids within next 45 to 60 days for erection of \$150,000 student center building and group of dormitory buildings for women to cost approx. \$500,000; student center building, 2 stories and basement, 192 ft. frontage with L depth of 130 ft., rein. conc., brick and stucco trim, also have conc. and tile swimming pool, about 300 bed rooms, dining room and kitchen, store postoffice, lounge, clubrooms and locker rooms, steam heat, tile floors, Spanish tile roof; group of dormitories, 3 stories and basement, 432 ft. frontage with depth of 280 ft., grouped around two courts, accommodate 450 to 500 students; buildings will have rein. conc. frame, brick and stucco trim, Spanish tile roof, 2 elevators, steam heat, refrigerating system; Wogan & Bernard, Archts., Old Raymond Bldg.

La., Golden Meadow—Following additional contractors estimating on \$50,000, 1-story, brick veneer school, bids Jan. 7 by LaFourche Parish School Bd., W. S. Lafargue, Supt., Thibodaux; Albert Seal, Bogaloussa; Caldwell Bros., 816 Howard Ave.; Reilly-Ruckstuhl, Inc., 423 Carondelet St.; J. V. & R. T. Burkes, Inc., American Bank Bldg.; J. M. DeFraites, Inc., 620 State St., all New Orleans; Dye & Mullings, Columbia, Miss.; G. L. Whitaker & Son, Tylertown, Miss.; D. E. Chapman, Weick Bldg., Baton Rouge; J. W. Oden, Carter Bldg., Hattiesburg, Miss.; Favrot & Livaudais, Archts., Hibernia Bank Bldg. 12-11

La., Litcher—St. James Parish School Bd., Court House, Convent, receives bids Jan. 13 for 3-story, 151x117 ft. school at St. James; 21 classrooms, 6 rooms for science dept. and auditorium; bids same date for 3-story, 151x117 ft. school at Litcher; 17 classrooms, 6 rooms for science dept. and auditorium; both buildings brick and frame, tile and comp. roofs, steam heat; bids same date for 2-story, 70x80 ft., frame school at Vacherie; 10 classrooms and auditorium, asbestos shingle roof; plans from Wm. R. Burk, Archt., Balter Bldg., New Orleans; also bids Jan. 13 for 8-room and auditorium addition and repairs to frame school at Romeville. Bids recently reported to be received Jan. 15. 12-18

La., Romeville—See La., Litcher.

La., St. James—See La., Litcher.

La., Vacherie—See La., Litcher.

La., New Orleans—Dillard Memorial University, Edgar B. Stern, Pres., Bd. of Trustees, soon have plans completed by Moise H. Goldstein, American Bank Bldg., for \$500,000 Flint-Goodridge Hospital for negroes, Louisiana Ave. and LaSalle St.; 4 stories, brick; also has preliminary plans by same architect for \$2,000,000 educational plant on Rose Hill tract, Gentilly Road near London Ave. 11-13

Md., Baltimore — Municipal Architectural Comsn. appointed Wyatt & Nolting, Keyser Bldg., as architects for Southeastern Jr. High School for which \$800,000 is available; site not selected, probably in Patterson Park or vicinity; H. J. Leimbach, Supvg. Engr., Bd. of Public Improvement Comsn., Municipal Office Bldg.

Md., Baltimore—Bd. of Public Improvement, H. J. Leimbach, Supvg. Engr., City Hall, ready for bids in early spring for Morrel Park School, Washington Blvd. and Spence St.; 2 stories, brick; John J. Zink, Archt., 2826 Overland Ave.

Md., Baltimore—Bd. of Public Improvement Comsn., H. J. Leimbach, Supvg. Engr., Municipal Office Bldg., ready for bids early in 1931 for School No. 122, Preston St. between Druid Hill and Pennsylvania Aves.; \$150,000; Flournoy & Flournoy, Archts., 334 St. Paul St.; Henry Adams, Inc., Mech. Engr., Calvert Bldg.; Henry Massart, Struc. Engr., 328 N. Charles St. 11-14-29

Md., Baltimore—Municipal Architectural Comsn. appointed Wm. F. Stone, Jr., 2612 N. Charles St., and MacKenzie & Cross, Professional Bldg., for two schools for handicapped children, to be built out of \$1,500,000 loan approved at recent election; H. J. Leimbach, Supvg. Engr., Bd. of Public Improvement Comsn., Municipal Office Bldg. 11-13

Miss., Booneville—Prentiss County Bd. of Education plans high school to replace structure noted burned at loss \$10,000.

Miss., Jackson—Bd. of Trustees, State School for Deaf, receives bids Jan. 6 for additional classroom and repairs and equipment; plans at office Frank P. Gates Co., Archts.-Engrs., 910 Merchants Bank & Trust Co.

Miss., Morton—Morton Consolidated School Dist. Trustees erect \$75,000, 145x120 ft., brick, stone trim school; comp. and tile roof; Hull & Malvaney, Archts., Merchants Bank Bldg., Jackson.

Miss., Pine Valley—Pine Valley Consolidated School Dist. Trustees plan school building.

Mo., Clayton, St. Louis—City voted \$325,000 bonds for following school building program: Addition to Glenridge School, providing 4 classrooms, kindergarten and gymnasium and auditorium, \$109,000; additions and improvements to Bellevue School, Richmond Heights, addition including heating plant and auditorium, \$78,000; cafeteria and addition to manual training department at Clayton High School, \$56,000; playground for Maryland School under construction, \$27,000; complete high school athletic field, \$15,000; site for school, Tulip Ave. and Kirkwood-Ferguson car lines in Richmond Heights section, \$12,000; misc. expenses, \$26,000; John L. Bracken, Supt., Bd. of Education. 12-18

N. C., Durham—Durham County Bd. of Education, L. H. Barbour, Supt., receives bids Jan. 29 for Hillandale-Shambley School near Shambley; \$25,000.

Okla., Claremore—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared by Layton, Hicks & Forsythe, Braniff Bldg., Oklahoma City, for \$150,000 dormitory for Oklahoma Military Academy.

Okla., Duncan—Bd. of Education, C. P. Davis, Pres., having sketches prepared for brick high school, Spruce St.; election soon on \$180,000 bonds.

Okla., Goodwell—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared for \$150,000 science building, Panhandle Agricultural and Mechanical College.

Okla., Guthrie—Bd. of Education having sketches prepared for \$175,000 brick high school.

Okla., Lawton—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared for \$150,000 science building for Connor School of Agriculture.

Okla., Tishomingo—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared for \$175,000 Murray School of Agriculture.

Okla., Warner—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared for \$150,000 Cameron School of Agriculture.

Okla., Wilburton—State Bd. of Affairs, Capitol Bldg., Oklahoma City, having sketches prepared for \$150,000 Oklahoma School of Mines.

S. C., Columbia—University of South Carolina, Dr. D. M. Douglas, Pres., rejected bids for \$300,000 educational building; have plans revised by J. Carroll Johnson, Sylvan Bldg., and call for new bids. 12-11

Tenn., Nashville—Bd. of Education, Albert E. Hill, Pres., plans \$500,000 senior high school in East Nashville.

Tex., Elkhart—School Bd., O. L. Lively, Pres., erect \$15,000 gymnasium; metal roof, oak floors.

Tex., Goodland—Goodland Consolidated School Dist. Trustees, W. C. Hopke, Sec., erect \$26,000, 1-story and part basement, 107.4x125 ft., semi-fireproof, 4-classroom, auditorium and gymnasium school; cement, pine and marble floors, built-up roof; S. B. Haynes, Archt., Myrick Bldg., Lubbock; bids in. 12-11

Tex., Huntsville—Huntsville Ind. School Dist. voted \$150,000 high school bonds. 12-4

Tex., Junction—Junction Ind. School Dist., C. A. Schraub, Pres., School Bd., has low bid at \$56,791 from H. L. McBride, 914 Preusser St., San Antonio, for 2-story, brick, rein. conc. and stone high school; Phelps & Dewees, Archts., Gunter Bldg.; W. E. Simpson Co., Engrs., Milam Bldg., both San Antonio.

Tex., Randolph Field—Capt. A. W. Parker, Constructing Quartermaster, having preliminary plans prepared by Marvin Eickenroht & Bartlett Cocke, Maverick Bldg., San Antonio, for \$48,000, one-story, 105x210 ft., U-shape, 8-classroom elementary school; tile, stucco and rein. conc., tile roof, cast stone, wood; tile and cement floors.

Tex., San Antonio—San Antonio Ind. School Dist. voted \$1,750,000 bonds for following school building program: Sr. High School, Astor and S. Pine Sts., \$750,000, auditorium, cafeteria, library and gymnasium, seat 2000 people; additions to present elementary schools and new elementary schools, approx. \$650,000, including elementary schools at Woolsey and Texas Ave., Hover near Nogalitos Sts., in Highland Park, on Durango, on East Dawson and Iowa and Monumental Sts.; Jr. High School, Lake Ave. and Mistletoe, approx. \$200,000; \$125,000 for gym. equipment; \$25,000 to be held in reserve; Dr. J. A. McIntosh, Pres., Bd. of Education; Phelps & Dewees, Archts., Gunter Bldg. 11-27

Tex., Wichita Falls—City, W. E. Broom, City Clk., plans vote during February or March, 1931, on \$300,000 bonds for Junior College. 10-23

Va., University—University of Virginia, Dr. Edwin A. Alderman, Pres., receives bids Dec. 30 for \$100,000, 3-story and basement, 43x121 ft., brick, stone trim, Colonial type addition to Cobb Chemical Laboratory; plans by John K. Peebles, Chmn., Architectural Comsn., Law Bldg., Norfolk; C. M. Guest & Son, Sharpe St., Anderson, S. C., estimating. 12-18

Stores

D. C., Washington—Stockwood Investment Co., Inc., 501 Seventh St., N. W., has permit for \$15,000, 1-story brick store, 2616 Connecticut Ave.

D. C., Washington—Adam A. Weschler & Son, Inc., 920 Pennsylvania Ave., N. W., erect 4-story building, 813-17 H St., N. W.

La., Alexandria—Hardtner Realty Co., Third and Murray Sts., expend \$25,000 for improvements to building to be leased to Scott Stores, Inc., 430 W. Randolph St., Chicago. 11-1

La., Shreveport—Hunter Land and Investment Co., Inc. soon let contract for \$50,000 commercial building, Market and Lake St.; H. E. Schwarz, Archt., Statterly Bldg.

Md., Baltimore—Wilton Realty Co., care Stanislaus Russel, Archt., 11 E. Lexington St., received bids Dec. 26 for two 1-story, brick stores, Bellona and Luman Sts.

Miss., Shaw—Mrs. Lena Ring, Greenville,

erect 2 store buildings to replace burned structures and repair building damaged by fire; L. C. Ring, Memphis, Tenn., arranging for rebuilding.

Mo., St. Louis—Chused Department Store, Inc., Ben Chused, 5930 Easton Ave., soon let contract for 1-story and basement, 25x70 ft., brick rear addition; comp. roof, hot water heat, wood floors; Julius E. Tarling, Archt., 2806 N. Grand Blvd.

Tenn., Memphis—Speedway Drug Co., T. E. Folis, 1013 Jackson St., has low bid from W. C. Owen & Co., Dermon Bldg., for 1-story, 50x50 ft., brick store, Claybrook and Jackson Sts.

Tenn., Nashville—Caldwell & Chapman, 414 Church St., Agents, rebuild 5-story structure destroyed by fire; \$150,000.

Tex., San Antonio—Schulte-United, Inc., Geo. A. Young, Sr., Asst. V. P., 485 Fifth Ave., New York, ready for bids about Jan. 1 for improvements to fireproof building, Houston and N. Presa Sts.; 56-ft. frontage; private plans. 9-18

Va., Richmond—Sydnor & Hundley, Inc., Jr., Pres., Seventh and Grace Sts., receive bids Jan. 5 for \$150,000, 6-story and basement, rein. conc., steel, brick and stone store, Grace St. between First and Second Sts.; Carneal, Johnston & Wright, Archts., Electric Bldg.; following contractors estimating: Muhleman & Kayhoe, 1505 E. Franklin St.; O. C. Peers, 3200 Hawthorne Ave.; Wise Granite & Construction Co., 16th and Hull Sts.; John T. Wilson Co., Mutual Bldg.; Claiborne & Taylor, Broad Grace Arcade; E. L. Bass & Bros., 708 Bainbridge St.; James Fox & Sons, 2501 E. Franklin St.; Allen J. Saville, Electric Bldg.; John W. Cowper Co., State Planters Bank Bldg.; Davis Bros., 1716 Summit Ave.; Doyle & Russell, Central Natl. Bk. Bldg.; J. R. Jones & Conquest, Amer. Natl. Bk. Bldg.; A. F. Perrin, 221 W. Graham Road; Harry B. Graham Construction Co., all Richmond; J. A. Jones Construction Co., Commercial Bank Bldg., Charlotte, N. C. 9-4

Va., Roanoke—A. M. Nelson, 1225 Third St., S. W., erect 3-story fireproof building to replace two structures noted burned at loss \$75,000.

Theatres

Tenn., Nashville—Warner Brothers Theaters, Inc., subsidiary operating company of Warner Brothers Pictures, Inc., 321 W. 44th St., New York, plans to start excavating within next 60 days for \$1,250,000 theater and office building which will tower 14 stories above ground level at Sixth Ave. and Church St.; stone, marble trim; seating capacity 3000 people; Marr & Holman, Archts., Stahlman Bldg., Nashville. 6-26

Warehouses

Ga., Marietta—Fry Shaw soon let contract for 1-story, 66x180 ft., brick warehouse on Cherokee St.; tar and gravel roof.

La., New Orleans—Geo. Foltz, 3000 Bruxelles St., receives bids Dec. 30 for 2-story warehouse in 3000 block Bruxelles St.; fireproof.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Ga., Atlanta—Fraternal Order of Eagles, 34½ Peachtree St., remodel bldg., 102½ Luckie St., N. W.; 3 stories; day labor.

Okla., Oklahoma City—Young Women's Christian Assn., Mrs. W. S. Hanson, member, Bldg. Comm., let contract at \$425,000 to J. H. Frederickson & Co., Baltimore Bldg., for bldg.; fireproof, brick, stone, steel and rein. conc., 9 stories and basement, 125x120 ft.; accommodate 200 permanent and 150 transient guests; Hawk & Parr, Archts., First Natl. Bk. Bldg. 11-5

Bank and Office

Ga., Atlanta—United Corp., Candler Bldg., let wrecking contract to Shelverton Construction Co., Bona Allen Bldg., in connection with remodeling and additions to fireproof bldg., Luckie, Forsyth and Broad Sts., for stores and offices; struct. steel, Ingalls Iron Works Co., Healey Bldg., \$200,000; structure now 6 stories; add 2 stories, tar and gravel roof, struc. steel and conc.; A. Ten Eyck Brown, Archt., A. Barill, Associate, both Forsyth Bldg. 11-13

Okla., Tulsa—Watt Plumbing, Heating & Supply Co., 608 S. Cincinnati St., has heating and plumbing contract at \$40,590 for

\$500,000 addition to Philcade Bldg. for Walte Phillips; wiring, Allen Electric Co., at \$10,326; Smith & Senter, Archts., Philtower Bldg.; W. R. Grimshaw Co., Contr., Kennedy Bldg. 12-18

Churches

Ark., Morrilton—Church of Our Lady of Perpetual Help, 10 miles from Morrilton, let contract to Joe S. Pierce, Morrilton, for \$12,000 bldg.; Colonial type, buff brick, 35x90 ft., 83-ft. tower; Haralson & Nelson, Archts., Fort Smith.

D. C., Washington—Kosher Israel Congregation, care Julius Wenig, Archt., Edmonds Bldg., erect brick, hollow tile, struct. steel and rein. conc. synagogue, 2801 N St., N. W.; 1 story, tile work, terrazzo and hardwood floors, hot water heat, oil burner, built-up roof; M. Cladny, Contr., 4047 Kansas Ave., N. W.

D. C., Washington—Church of Jesus Christ of Latter Day Saints excavating for \$200,000 Colonial type building, 16th St. and Columbia Rd., N. W.; stone; contain 56x30-ft. chapel to seat 300; 53x30-ft. recreation hall to seat 400; gymnasium, showers, locker and apparatus rooms in basement; kitchen; Young & Hansen, Archts., Salt Lake City, Utah; Don C. Young, Resident Archt.-Const.

Supvr., New Amsterdam Hotel, Washington; excavation, B. B. Allen, 109 C St., N. E. Washington.

D. C., Washington—National Shrine of Immaculate Conception, Catholic University, Rt. Rev. Thos. J. Shahan, member, Bd. of Trustees, let contract to McCloskey & Co., 1620 Thompson St., Philadelphia, Pa., for foundation for south part of church up to first floor slab; let contract to H. W. Cord Co., 1003 K St., N. W., Washington, for grotto chapel; pink granite, conc. and brick; Maginnis & Walsh, Archts., Statler Bldg., Boston, Mass.; Fredk. B. Murphy, Asso. Archt., 1413 H St., N. W., Washington. 12-11

Mo., St. Louis—St. Nicholas Greek Orthodox Church, Andrew G. Rally, Chmn., Bldg. Comm., 824 Market St., let contract to C. A. Welsch Construction Co., DeMenil Bldg., for \$250,000 bldg., Forest Park Blvd. near Kingshighway; brick, stone and terra cotta, 2 stories and basement, about 107x59 ft., Byzantine design; E. K. Eugene, Archt., 436 E. 79th St., Chicago, Ill. 2-20

Okla., Muskogee—St. Pauls M. E. Church, J. T. Griffin, Chmn., Bldg. Comm., let millwork contract for \$100,000 bldg. to Marshall Lumber Co., 429 N. Third St.; steel, Muskogee Iron Works, Frankfort and Spaulding Sts.; wiring, Oklahoma Electric Co., 307 W. Okmulgee St.; H. H. Niemann, Archt., Barnes Bldg.; owner builds. 12-18

Tex., Dallas—Oak Cliff Presbyterian Church, W. E. Robinson, Chmn. of Bd., 133 E. 12th St., let contract on cost plus basis to Lasell Construction Co., Melba Bldg., to rebuild superstructure of church; \$20,000; 3 stories, hardwood and edge grain pine floors, rein. conc. foundation, slate roof; address S. E. Lasell, Archt., 600 N. Lancaster St. See Want Section—Building Material and Equipment. 12-18

City and County

Ga., Atlanta—Fulton County Bd. of Comrs. let contract at \$18,250 to Ray M. Lee, 213 Westminster Drive, N. E., for fire station, Buckhead; steel; Hentz, Adler & Shutze, Archts., Candler Bldg.; Robt. S. Fiske, Const. Engr., Healey Bldg. 12-4

Ga., Barnesville—Lamar County let contract for \$75,000 court house to Barnesville Planing Mill Co.; W. C. Spiker & Co., Engrs., Standard Bldg., Atlanta; rein. conc., brick and tile, 2 stories, 116x69 ft., comp. and terrazzo floors, conc. foundation, built-up roof; E. C. Wachendorf, Archt., Atlanta; work not started. 12-18

La., Crowley—Acadia Parish Police Jury let contract at \$13,988 to R. L. Roland, 1901 Lee St., Alexandria, to remodel court house; metal partitions, oak, soft tile and marble floors; Wm. R. Burk, Archt., Balter Bldg., New Orleans. 12-4

Okla., Tulsa—City let contract for \$50,000 juvenile detention home adjoining Mohawk Park to Acme Construction Co., 1506½ S. Main St., at \$23,203; A. J. Love, Archt., Ateo Bldg. 11-20

Tex., Amarillo—Johnson-Davis, Oliver-Eagle Bldg., Amarillo, has plumbing and heating contract for \$420,000 Potter County court house; elect. work, N. E. Busby Electric Co., 4004 Main St., Dallas, Tex.; elevators, Otis Elevator Co., 222 W. Second St., Oklahoma City, Okla.; jail equipment, Southern Prison Co., 4500 S. Presa St., San Antonio, Tex.; Townes, Lightfoot & Funk, Archts., Smith Bldg., Amarillo; Page Bros., Asso. Archts., Austin Natl. Bk. Bldg., Austin; C. S. Lambie & Co., Contrs., Amarillo Bldg., Amarillo. 12-18

Tex., Fort Worth—City Council, O. E. Carr, City Mgr., may call election on \$750,000 city hall bonds; tentative plans call for 12-story structure on site of present building.

Tex., San Antonio—City let contract to W. E. Wilkens, 1016 Gladstone St., for Palm Heights club and recreational bldg.; Wilder & Smith, Inc., Archts., Texas Theatre Bldg.; J. W. Beretta Engineers, Inc., Natl. Bk. of Commerce Bldg. 12-11

Dwellings

D. C., Washington—Schwab, Valk & Canby, 1704 Connecticut Ave., N. W., erect \$10,000 dwelling, 4509 Lowell St., after plans by Alfred B. Pierson, Archt., Union Trust Bldg.; brick, 2 stories, wood joists, oak floors, slate roof; engineering by archt.; on foundation. See Want Section—Building Material and Equipment. 12-18

D. C., Washington—Jacobson Bros., 1616 K St., N. W., erect \$10,000 dwelling, 1329 Kennedy St., N. W., after plans by Geo. S. White, 1412 I St., N. W.; brick, 2 stories. 12-18

D. C., Washington—Waple & James, 1226 14th St., erect 6 brick dwellings and garages, Nicholson St. near Fourth St., N. W.; 2 stories, slate and tin roofs, hot water heat, elect. refrigerators; Geo. T. Santmyers, Archt.; ready for sub-bids in about 30 days.

Fla., Homestead—G. C. Calderwood, St. Paul, Minn., purchased Redland property; erect \$15,000 residence; work start after Jan. 1.

Fla., Miami Beach—Frank Wyatt Woods, Archt., Ingraham Bldg., Miami, erect \$30,000 residence, 94th St. and Collins Ave., North Miami Beach; rein. conc., conc. block and stucco, 30x110 ft., tile roof, 5 baths, 3-car garage; day labor; sub-contracts let on plumbing, roofing, elect. work, tile work, millwork, conc. blocks.

Fla., Miami Beach—Following sub-contracts let on residence, Di Lido Island, for Dr. J. Raymond Graves, Huntington Bldg.; Piling, Geo. Bunnett, 46 N. E. 47th St.; masonry, B. F. Weaver Co., 123 N. W. 23rd St.; rein. steel, sand and gravel, Consolidated Supply Co.; cement, E. J. Warner Co., 169 N. E. 31st St.; millwork, A. H. Ramsey & Sons, 71 N. W. 11th Terrace; plumbing, D. Tidwell, 1433 N. W. 13th Terrace, all Miami; rough lumber, Miami Beach Lumber Co., Miami Beach, and Bailey's Lumber Yard, 1616 N. W. 29th St., Miami; Russell Pancoast, Archt., Lincoln Rd., Miami; Geo. W. Langford Co., Contr., McAllister Hotel Bldg., Miami, and Louisville, Ky. 12-18

Fla., Miami Beach—Saml. J. Hale, Contr., plans dwelling and garage; work probably start about Jan. 1.

Ga., Atlanta—H. D. Landrum, 1010 White St., S. W., erect brick veneer residence, 1720 S. Gordon St., S. W.; 1 story, hardwood floors, comp. shingle roof, hot air heat; owner builds.

Ga., Atlanta—E. C. Brand, 278 Milton Ave., S. E., erect brick veneer residence, 1301 Hill St., S. E.; wood floors, comp. roof; owner builds.

La., New Orleans—O'Neil Labeaud, Contr., 3336 Annette St., erect dwelling; sheet metal work, asbestos roof.

La., New Orleans—Philip Schneller, 4141 Orleans St., erect double dwelling, Colapissa and Burdette Sts.; asbestos roof, orna. iron work, sheet metal work.

La., New Orleans—Philip Schneller, Contr., 4141 Orleans St., erect double dwelling, Colapissa St. near Fern St.

La., New Orleans—Anthony Henry, Contr., 2754 Acacia St., ready in about 15 days for sub-bids on single dwelling, Crestmont Park.

Md., Baltimore—Jos. O. Blair, 330 St. Paul Place, erect \$10,000 dwelling, 3610 Sequoia Ave.; cinder block and stucco; owner builds.

Md., Baltimore—Garnet Hulings, Vice-Pres., Continental Steamship Co., Keyser Bldg., let contract to Raymond C. Maule, 2040 Robb St., for alterations and addition to residence, Stone Hall Farm, Worthington Valley; Wrenn, Lewis, Westenhaver & Jencks, Archts., Title Bldg. 12-11

Md., Baltimore—Mrs. Robt. D. Hopkins, Bellona and Brightside Aves., Green Spring Valley, let contract to Thos. Hicks & Sons, Inc., 106 W. Madison St., for alterations to residence; brick, 2 stories, 50x35 ft., soapstone and wood floors, slate roof; \$33,000; work started; Taylor & Fisher, Archts., Balto. Trust Bldg. 12-11

Md., Baltimore—John L. Tregellas, Bldr., 10 E. Fayette St., erect 3 frame semi-bungalows, 6000-04 Sycamore Ave.; 2 stories; total \$10,000.

Md., Baltimore—John Welsh, Bldr., 11 E. Fayette St., erect 4 frame dwellings, 4612-19 Arabia Ave.; 2 stories, 20x30 ft.; total \$13,000; Geo. Wessel, Archt., 601 W. 40th St.

Mo., St. Louis—John W. Miller, 4323 Loughborough St., erect 2 brick dwellings, 5630-32 Milentz St.; 1 story, 26x45 ft., comp. roofs, hot air heat; plans and constr. by owner.

Mo., St. Louis—Hellen Overstreet, 4406 Natural Bridge St., erect 2 brick dwellings, 4650 Natural Bridge and 5923 Floy St.; 1 story, 24x44 ft., asphalt shingle roofs, hot air heat; \$10,000; A. G. Collier, Contr., 5205 Maffitt St.

Mo., St. Louis—Anton Degenhardt, 6128 S. Grand Blvd., erect \$10,000 residence, 3844 French Court; brick, 2 stories and basement, 26x44 ft., tile bath, hardwood floors, rubberoid shingle roof, hot air heat; work by sub-contract.

Mo., St. Louis—Yeckel-Earickson & Co., 3542 Gravois Ave., erect 6 dwellings, 6101-20 Wanda St.; brick, 1 story and basement, 29x39 ft., hardwood floors, tile baths, rubberoid shingle roofs; total \$36,000; O. J. Popp, Archt., Arcade Bldg.; Wm. Kuna, Jr., Contr., 4832 Allemania Ave.

Mo., St. Louis—Mabel Taylor, 3117 Watson St., erect 2 dwellings and garages, 6215-19 Murdock St., and 1 dwelling, 5855 Itaska St.; C. J. Steffens, Archt., 5045 Grace St.; Harry Hardt, Contr., 3117 Watson St.

Mo., St. Louis—H. M. Straub, 110 N. Eighth St., erect \$10,000 brick dwelling, 4620 Korte Ave.; 2 stories and basement, 29x32 ft., hardwood floors, asphalt shingle roof, tile bath, hot air heat; H. M. Kissells' Sons, Contrs., 4107 W. Florissant Ave.

Mo., St. Louis—W. Weingarten, care R. Mederacke, Inc., Contr., 3126 S. Kingshighway Blvd., erect \$10,000 residence, 6226 Mardel Ave.; brick, 1 story and basement, 28x48 ft., stone foundation, tile bath, hardwood floors, asphalt shingle roof, hot water heat.

Okla., Oklahoma City—H. R. Mahaney let contract to Walle-Wells Construction Co. for brick residence; 2 stories; J. D. Forsythe, Archt., Exch. Bk. Bldg. 12-4

Okla., Oklahoma City—E. C. Ross & Son, 711 E. 16th St., erecting 2-story brick veneer dwelling, 634 E. 15th St.

Tenn., Nashville—R. G. Knapp let contract to E. E. Austin, Commerce St., for brick residence, Ridge Top; 1 story and basement; Warfield & Keeble, Archts., Nashville Trust Bldg. 12-18

Tex., Houston—River Oaks Corp., River Oaks Bldg., erect 10 dwellings, River Oaks; \$200,000; start work at once.

Va., Norfolk—Dr. A. D. Morgan, Medical Arts Bldg., erect \$14,000 residence, 1345 Willowood Drive; English type, stone and brick, 2 stories; Geo. L. Hayes, Contr., 2110 St. Dennis Ave.

Va., Richmond—Claiborne & Taylor, Grace-Broad Arcade, have contract for 3 brick dwellings and garages, Windsor Farms.

Government and State

D. C., Washington—National Erection Corp., Pennfield Bldg., Philadelphia, Pa., has sub-contract to erect marble, limestone, sandstone, etc., for \$7,500,000 office bldg. for House of Representatives; Thomas Moulding Floor Co., 165 Wacker Drive, Chicago, Ill., cork tile and inoleum flooring; McDonald Steel Erecting Corp., 356 L St., S. W., Washington, steel erection; plans for structure by Allied Architects of Washington, Inc., 16 Jackson Place, N. W.; G. A. Weschler, Mech. Engr., 16 Jackson Place, N. W., both Washington; Consolidated Engineering Co., Inc., Contr., St. Paul and Franklin Sts., Baltimore, Md. 12-18

D. C., Washington—Wolffsteiner Co., 1315 W St., has contract for copper roof for part of Library of Congress bldg.; \$25,000.

N. C., Fort Bragg—Constructing Quartermaster let contract at \$43,180 to York Construction Co., Odd Fellows Bldg., Raleigh, for nurses' home; tile, stucco, 3 stories, 147x33 ft., wood floors, conc. foundation, tile roof. 12-18

Hospitals, Sanitariums, Etc.

Ky., Ashland—Dr. J. T. Cottrell, Catlettsburg, erect 2-story brick clinic and hospital; 10 to 12 beds; operating room; contract let.

Va., Richmond—Richmond Structural Steel Co., Inc., 17th and Dock Sts., has contract for 95 tons struct. steel for \$127,000 nurses' home for St. Phillips Hospital; contract for steel joists, metal lath, rein. bars, floor pans and steel windows to Truscon Steel Co., 724 Central Natl. Bk. Bldg.; Baskerville & Lambert, Archts., Cent. Natl. Bk. Bldg.; Davis Bros., Inc., Contrs., 15 N. Sixth St. 11-20

Va., Richmond—Following sub-contracts let on \$250,000 Virginia Home for Incurables under constr.: Terra Cotta, Atlanta Terra Cotta Co., 19 W. 24th St.; fireproofing, Keystone Gypsum Fireproofing Co., 1328 Broadway, both New York; excavating, K. L. Black & Co., 1314 Grayland Ave.; elevator doors and bucks, Earnest Bros., 805 E. Franklin St.; plastering, C. C. Elliotts, P. O. Box 82; brick and tile masonry, Fulton Brick Works, 929 Meyers St.; plumbing, S. H. Guza, 13 W. Carey St.; hardware, Tom Jones Hardware Co., 1517 W. Broad St.; millwork, Miller Manufacturing Co., 600 Stockton St.; dumbwaiters, W. Morton Northen & Co., Inc., Central Natl. Bk. Bldg.; struct. steel, Richmond Structural Steel Co., 17th and Dock; elect. work, Stringer Electric Co., 517 E. Main St.; rein. steel, Virginia Steel Co., 17th and Dock; painting, M. E. Jones, 3203 Woodrow Ave., all Richmond; limestone, Bloomington Limestone Co., Bloomington, Ind.; case-ments and sub-frames, International Casement Co., Jamestown, N. Y.; incinerator, Kernerator Incinerator, Milwaukee, Wis.; door bucks, W. F. Overly & Son, Greensburg, Pa.; steel sash, Truscon Steel Co., Youngstown, O.; tile, R. N. Vanderberry, 507 Commerce

St., N. W.; misc. iron, Walker Machine & Foundry Corp., both Roanoke, Va.; Baskerville & Lambert, archts.; Doyle & Russell, Contrs., both Central Natl. Bk. Bldg., Richmond. 8-7

Hotels and Apartments

D. C., Washington—H. L. Thornton excavating for \$50,000, 2-story, 123x13 ft., brick apartment, 422 Butternut St.; slag and slate roof, 28 apartments containing 45 rooms; Doran S. Platt, Archt.; Davis & Platt, Contrs., all 6900 Fourth Ave., N. W. See Want Section—Building Material and Equipment.

Md., Baltimore—City Council adopted ordinance authorizing construction apartment house, Charles St. Ave. and Bishops Road, on which work is planned to start soon by Greenway Apartment Co., J. I. Goldstein, Pres., Greenway Apartments, Charles and 34th Sts.; new plans being prepared by Frederic A. Fletcher, Archt., 13 W. Franklin St.; Consolidated Engineering Co., 20 E. Franklin St., probably contractor. 1-10-29

Mo., St. Louis—Irene H. Brockett erect two 2-story, 27x49 ft., brick tenements, 5504-8 Rosa St.; \$18,000; comp. shingle roofs, hot air heat; J. Brockett, Archt.-Bldr., 712 Sheridan Drive, Webster Groves.

Mo., St. Louis—A. Mayer, 3548 S. Grand Blvd., erect 2-story, 50x29 ft., brick tenements, 3956 Dunnica St. and 3842-46 Alexander; \$26,000.

Okla., Tulsa—Oscar Springer, 912 E. Sixth St., soon start work on \$24,000, 2-story and basement, 40x84 ft., 11-apartment and garage; owner, Archt.-Bldr.

Tex., San Antonio—Geo. Sexauer, Central Bldg., has permit for \$20,000, 2-story, 24-room, stucco, 8-apartment building, 208 Bushnell St.; Carvel & Co., Contrs., Milam Bldg.

Tex., San Antonio—George Sexauer, Central Trust Bldg., has permit for \$20,000, 24-room apartment, 208 Bushnell Ave.; Carvel & Co., Contrs., Milam Bldg.

Miscellaneous

Fla., Dade City—Retired Ministers' Assn., Charles L. Swain, Pres., Cincinnati, Ohio, erect home on 200-acre site; cottage plan with dining room, kitchen and office in center; hollow tile and stucco; George Anderson, Contr.

Ga., Savannah—Black & Winemiller, Savannah, and Indianapolis, Ind., erect \$35,000, 36-unit tourist lodge building on Port Wentworth Highway; day labor.

Mo., St. Louis—Terminal Railroad Assn., Henry Miller, Pres., Union Station, let contract to Gamble Construction Co., 401 Olive St., for \$5,000,000, 21-story, brick, steel and rein. conc. merchandise mart and terminal warehouse, Poplar, Spruce, 12th and 13th Sts.; foundation 90 per cent completed; to be operated by St. Louis Mart, Lawrence H. Whiting, Pres. of Boulevard Bridge Bank, Chicago; Preston J. Bradshaw, Archt., 18 Locust St.; W. J. Knight & Co., Consit. Engrs., Wainwright Bldg., both St. Louis. 11-13

Schools

Ala., University—University of Alabama, Shaler Houser, Treas., let contract to D. T. Underwood Const. Co., Pioneer Bldg., Birmingham, for additions to gymnasium building; one story, 50x150 ft., including pool 30x70 ft., brick, stone trim; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham; Mason & Dullon, 3024 Third Ave., S., Birmingham, have contract for plumbing; Barnes Electric Co., Tuscaloosa, contract for wiring. 12-4

D. C., Washington—District Comms., R. M. Brennan, Ch. Clk., Engr. Div., District Bldg., will let contract to Loudoun-Rust Co., 1406 G St., N. W., for 1-story, 63x130 ft., 4-room extensible school, 10th and Franklin Sts., to be known as Crosby Noyes School; built-up roof, wood floors; A. L. Harris, Municipal Archt. See Want Section—Building Material and Equipment. 12-18

Ga., Thomasville—Bd. of Education, B. B. Broughton, Sec., let contract at \$72,000 to Daniels Lumber Co., LaGrange, for 2-story and basement, 167x105 ft., rein. conc., brick and tile, stone trim high school; Lockwood & Poundstone, Archts., Marietta Bldg., Atlanta. 12-4

La., Baton Rouge—City, L. J. Ricand, Commr. of Finance, City Hall, let contract to L. W. Eaton, 1601 N. Blvd., for repairs to Convention School, recently damaged by fire; Lewis A. Grosz, Archt., New Raymond Bldg. 12-11

La., Ball—Lincoln Parish School Bd., H. L. Campbell, Supt., Ruston, let contract to John Carter, Ruston, for school to replace recently burned structure; 2 rooms.

Md., Woodside—Montgomery County School Comms., Dr. Lewis, Supt., Rockville, let contract at \$11,855 to Herbert Johnson, Colesville, for 2-story, brick school addition; slate roof; Edward W. Cutler, Archt., 1800 E St., Washington, D. C. 12-11

Mo., St. Louis—St. Louis University, Rev. Jos. L. Davis, S. J., Regent, 221 N. Grand Blvd., let contract to Gillespie & Daly for \$250,000, 4-story and basement, 126x184 ft., brick and rein. conc. Commerce and Finance Bldg., Lindell Blvd., west of Grand Blvd.; heating, Heckel, Gunn Heating Co., 3685 Olive St.; plumbing, C. Moynihan & Sons, 2007 Olive St.; electric equipment, John Finley Electric Co.; Henry P. Hess, Archt., Ambassador Bldg. 12-4

Tenn., Chattanooga—Baylor Institute let contract to Selman-O'Brien Co., 670 Ga. Ave., for dining room building; one story and basement, 102x38 ft., with wing 30x40 ft., brick, wood floors, slate or comp. shingle roof; Pringle & Smith, Archts., Norris Bldg., Atlanta, Ga.

Tex., San Antonio—Society of Mary, care Brother John Waldron, St. Mary's Academy, 112 College St., let contract at \$39,645 to Walsh, Burney & Key, Inc., 928 N. Flores St., San Antonio, for high school on N. St. Mary's St.; 3 stories and basement, Z-shape, brick, tile and rein. conc.; terrazzo, tile, linoleum, conc., oak and maple floors; Henry Dreisoerner, Archt., 3826 Arsenal St., St. Louis, Mo.; Lilly & Drought, Engrs., Frost Natl. Bank Bldg., San Antonio. 12-4

Stores

D. C., Washington—S. M. Dudley, 1421 You St., N. W., remodel building, 1419-21 You St., for stores, offices and apartments; Mary Reiley, Contr., 623 North Carolina Ave., S. E.; R. C. Archter, Archt., 1759 You St.

D. C., Washington—M. Gumenick, 1706 16th St., N. W., has contract for 2-story, 30x5 ft., brick, Indiana limestone trim store, 1100 block 15th St., N. W.; slag roof, terrazzo floor, skylight; W. S. Plager, Archt., 1930 Kearney St., N. E.

D. C., Washington—B. B. Horn, care W. S. Plager, Archt., 1930 Kearney St., N. E., let contract to M. Gumenick, 1706 16th St., for store, 1137-39 15th St.; Sanitary Grocery Co., Inc., Lessee, 1845 Fourth St., N. E.

Ga., Marietta—Blair Estate rebuild store on N. Park Square recently damaged by fire; 2 stories and basement, brick, comp. roof, stone trim; general interior and exterior repairs, store fronts, millwork, painting; owner builds by day labor; A. Ten Eyck Brown, Archt., and A. Barill, Jr., Asso., both Forsyth Bldg., Atlanta. 11-20

La., Oakdale—Joe Mowad started work on 28x60 ft., brick store on 10th St.; John W. Hudson, Contr. 9-11

Md., Baltimore—M. Shalvitz Sons, 816-26 S. Charles St., let contract to A. Goodman, 2000 Whittier Ave., for alterations to store; 3 stories, 100x100 ft., brick, steel and conc.; asbestos roof, wood floors; A. C. Radziszewski, Archt., 425 S. Ellwood Ave. See Want Section—Building Material and Equipment. 12-18

Mo., St. Louis—Hub Furniture Co., 701 Washington Ave., has permit for \$25,000, 5-story, 22x110 ft., brick store and loft building, 705 Washington St.; conc. roof, steam heat; W. S. Frank, Archt., 4540 Parkway Place; Chas. F. Realty & Bldg. Co., Contr., 701 Washington Ave.

Va., Richmond—Miller & Rhoads, 509 E. Broad St., let contract to Doyle & Russell, Central Natl. Bank Bldg., for 3-room addition to store; Carneal, Johnston & Wright, Archts., Electric Bldg. 11-27

Warehouses

D. C., Washington—The Hanson-Owen Co. let contract at \$73,500 to R. P. Whitty Co., Denrike Bldg., for 4-story and basement, 102x61 ft., brick, conc. block and hollow tile warehouse and store, Fourth St. and Rhode Island Ave., N. E.; comp. roof, steel stairway, freight elevator, vacuum steam heat, skylights; to be occupied by E. G. Schafer Co., Claude W. Owen, Pres., 4100 Georgia Ave., N. W.; Col. P. M. Anderson, Archt., Investment Bldg. 12-11

D. C., Washington—Wilton J. Lambert, Munsey Bldg., erect 2-story, 134x50 ft., brick, limestone trim warehouse, 25 Massachusetts Ave.; elevator, slag roof; Schneider-Spliedt Co., Contr., 1416 F St.

Ga., Marietta—M. L. McNeel, McNeel Marble Co., let contract to G. T. Bettis to rebuild warehouse on Cherokee Ave.; brick, tar and gravel roof.

Tex., Houston—Edwin Champiomont, 2106 Washington St., erect one story warehouse, 1815 Washington Ave.

Trade Literature

Pothead Type Transformers.—Westinghouse pothead type transformers, manufactured by the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., are illustrated and described in a leaflet recently issued.

Copper and Brass.—The bulletin of the Copper & Brass Research Association, New York, has been issued as of December 1, 1930. The publication is devoted to the many uses of copper and brass and outlines some outstanding characteristics of these products. In addition, it illustrates their use for different types of construction.

Traction for Action.—A booklet with the foregoing title has been issued by the Caterpillar Tractor Co., Peoria, Ill., manufacturer of track-type tractors, combines and road machinery. It is designed to tell the story and "picture the why" of track type tractors. The publication illustrates various applications of different models of Caterpillar track type tractors.

Insulating Board.—Utilization of cornstalks for the manufacture of insulating board is discussed in Publication No. 112 of the Bureau of Standards, Washington. The report is based on co-operative work of the Bureau and the Iowa State College at Ames, as a result of a special appropriation by Congress for a study of industrial possibilities of agricultural waste.

Ash-Handling.—Two booklets issued by the Allen-Sherman-Hoff Co., Philadelphia, and designated as catalogs Nos. 1130 and 1230, are devoted respectively to Hydrojet advantages of ash-handling and Hydrojet applications. The Hydrojet system provides for continuous storage of accumulating ashes and their periodic removal and transportation by means of high-pressure water streams. Catalog No. 1130 deals with this operation and presents a number of illustrations bearing on various phases of the work; catalog No. 1230 describes the application of the Hydrojet system to various types of fuel-burning furnaces.

Directory of Gas Companies.—The 1930 edition of Brown's Directory of American Gas Companies and Gas Engineering and Appliance Catalogue is ready for distribution. Compiled, edited and published annually by the Robins Publishing Company, Inc., New York, this directory contains statistics of gas companies in the United States, Canada and the more important companies of Mexico and South America. It also presents collected, consolidated and standardized catalogued data of gas equipment, appliances and supplies, with indexes both of firms and products. Because of important changes in the gas utility industry the past year, the new directory embodies many changes in tabulations as affecting personnel, capitalization, number of meters and appliances, miles of mains, etc. It lists natural gas companies to the number of 165 more than were listed in 1929; 35 more holding companies; 143 new names of members of various gas associations and their company connections, and devotes a section to Butane gas. The price of the directory is \$15.

(Continued on page 60)

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Air Compressor.—Ox Oil and Gas Co., 1329 Joplin St., Joplin, Mo.—Wants air compressor.

Destructive Distillation Apparatus.—J. Paul Gaines, Courthouse, Sarasota, Fla.—Wants prices and data on apparatus for extracting tar and resin from pine roots and stumps, on small scale.

Locomotives (Gasoline).—W. M. Smith & Co. (Mchy. Dealers), Box 1709, Birmingham, Ala.—Wants prices and data on 2 20-ton gasoline locomotives.

Meter Pumps.—Ox Oil and Gas Co., 1329 Joplin St., Joplin, Mo.—Wants meter pumps.

Pressure Lubricating Outfits.—Ox Oil and Gas Co., 1329 Joplin St., Joplin, Mo.—Wants pressure lubricating outfit.

Andrew A. Bato, Conslt. Engr., 339 North Grove St., East Orange, N. J.—Wants prices and data on following, all first class condition:

(1) **Boilers (Steam)**—150 lb. pressure, 400 h. p., for fuel oil, headroom, including piping and breeching, 19 ft. or less; 250 lb. pressure, for fuel oil.

(2) **Generator (Engine)**—150 to 200 kw., d. c., 240 volts, 150 lb. steam pressure, slide valve, Corliss or Uniflow.

(3) **Generator (Turbine)**—150 to 200 kw., d. c., 240 volts, 250 lb. steam pressure.

C. J. Schnadelbach, 2678 Seacin St., New Orleans, La.—Wants prices and data on following:

(1) **Holst (Hand)**—to apply directly to gin pole, lifting about 6 tons, operated by crank with ratchet.

(2) **Reel**—to hold about 120 ft. of cable or rope; to be handled by 1 or 2 men.

Turbines (Hydro).—Sonken Galambra Corp., 64 N. Second St., Kansas City, Mo.—Wants prices and data on two 200 to 400-kw. hydro turbines, 50-ft. head; 200 to 400-kw. hydro turbine, to operate on 10 to 12-ft. head; both good condition.

Welding Machines (Electric).—W. M. Smith & Co. (Mchy. Dealer), Box 1709, Birmingham, Ala.—Wants to represent manufacturers of electric welding machines.

J. G. Gravely, Woodstock, Va.—Wants prices and data on following to be used in making apple butter:

(1) **Boiler (Tubular)**—used, good condition.

(2) **Kettle**—200 gal., copper lined, equipped with agitator.

W. M. Smith & Co. (Mchy. Dealer), Box 1709, Birmingham, Ala.—Wants prices and data on following:

(1) **Engine (Corliss) and Generator**—250 to 400-h. p. engine, 125 to 350-kw., a c. generator.

(2) **Punch Press**—small, for light sheet metal work.

Miscellaneous

Bins.—C. H. Roberson (Farm Operating Equipment), 29 Court St., Freehold, N. J.—Wants prices and data on used steel repair bins.

Hopkins Baby Feeder, Inc., E. L. Johnson, Pres., Bedford, Va., recently organized, wants prices and data from firms in position to manufacture baby feeders to be used in hospitals, nurseries and homes; consists of 3 rods or tubes, of non-corrosive metal, rods being about 2 ft. long, equipped with adjustable full universal joints.

Thermometers and Barometers.—J. H. Hatcher, P. O. Box 376, Cuthbert, Ga.—Wants prices and data from manufacturers of thermometers and barometers.

Building Material and Equipment

A. B. Pierson, 929 Union Trust Bldg., Washington, D. C., wants prices on following for \$10,000 dwelling:
Cast Stone
Electric Refrigerators
Flooring—hardwood, tile
Roofing (hip)—slate.

Chas. F. Levy Realty & Bldg. Co., 701 Washington Ave., St. Louis, Mo., wants prices on following for \$50,000, 5-story store:

Elevators

Metal Doors.

A. C. Radziszewski, Archt., 425 S. Ellwood Ave., Baltimore, Md., wants prices on following for 3-story, 100x100 ft. store:

Elevators

Flooring—hardwood

Limestone

Marble

Metal Ceilings

Metal Doors

Roofing—built-up

Steel Sash and Trim

Wire Glass

Brass and Bronze Work.

David H. Little, Contr., 3417 Glen Ave., Baltimore, Md., wants prices on following for dwelling:

Electric Refrigerators

Flooring—hardwood, tile

Roofing—asphalt shingle.

Davis & Platt, Contrs., 6900 Fourth Ave., N. W., Washington, D. C., want prices on following for \$50,000 apartment:

Cast Stone

Electric Refrigerators

Flooring—hardwood, linoleum, terrazzo, tile

Incinerator

Plaster Board

Roofing—built-up, slate.

E. J. Mendenhall (Lumber and Building Supply Dealer), General Delivery, Groesboro, N. C., wants prices from manufacturers of following:

Doors (Veneer)

Millwork

Steel Sash

Glass (Ar)

Insulating Board

Brick.

J. D. Thomason & Co., 7 W. 12th St., Columbus, Ga., wants prices from manufacturers of:

Tile—for bathroom floors and walls.

Loudoun-Rust Co., Contr., 1406 G St., N. W., Washington, D. C., wants prices on following for 4-room school:

Flooring—terrazzo, tile

Roofing (flat)—built-up.

Roy F. Brower, Archt.-Contr., 12 S. E. 33rd St., Oklahoma City, Okla., wants prices on following for \$20,000 apartment:

Cast Stone

Flooring—linoleum, tile.

Walter M. Johnson, Contr., Ruleville, Miss., wants manufacturers catalogs and samples; also wants prices on following:

Building Specialties

Concrete Construction

Flooring—tile

Plumbing

Roofing—tile

Structural Steel and Iron.

W. E. Robinson, 133 E. 12th St., Dallas, Tex., wants prices on following for \$20,000 church:

Plaster Board

Roofing—slate.

Bids Asked

Boiler.—Quartermaster, Camp Knox, Ky.—Bids Jan. 7 for steam heating boiler.

Boiler Settings, Coal Burning Equipment, etc.—Chief of Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids Jan. 7 for air-cooled settings for two 1000-h. p. water tube boilers furnished by government, including smoke breeching, stoker-fired furnaces or pulverized coal burning equipment, motor-driven forced draft units, operating floors and walkways, boiler plant accessories and piping, steam-jet ash conveyor and alterations to existing chimney and ash tank, navy yard, Washington.

Boiler Tubes.—U. S. Engr. Office, Huntington, W. Va.—Bids Dec. 31 for boiler tubes for boiler boat 52.

Boilers, etc.—Supt. of Lighthouses, Fifth Dist., Baltimore, Md.—Bids Jan. 12 for water tube boilers and oil-burning equipment for tenders Sunflower and Orchid.

Brass.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 5 for 265 ft. brass rod and 20.634 ft. sheet brass.

Bridges.—State of Virginia — Bids for 3 bridges. See Construction News—Bridges, Culverts and Viaducts.

Bridges.—Magnolia, Miss. See Construction News—Roads, Streets and Paving.

Bridges.—State of Alabama—Bids for 9 bridges. See Construction News—Roads, Streets and Paving.

Building Material.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Jan. 12 for following, Sch. 2616:

Hollow metal doors, iron gates, grille gates, grilles, grille guards, screen stops and hardware.

Buoy Logs.—Supt. of Lighthouses, Fifth Dist., Baltimore, Md.—Bids Dec. 31 for 600 spar buoy logs for Portsmouth, Va.

Chisels and Blanks.—See Miscellaneous Machinery, etc.

Containers.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 6 for 4400 tinplate unit containers.

Chassis.—Comms., District of Columbia, Washington, D. C.—Bids Dec. 31 for 4 truck chassis equipped with cab, 3½-ton capacity.

Core Drilling.—U. S. Engr. Office, Jacksonville, Fla.—Bids Dec. 29 for core drilling in Lake Okeechobee, Fla.

Drill and Tapper.—See Miscellaneous Machinery, etc.

Electrical Equipment.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Jan. 19 for electrical equipment for towing locomotives, Sch. 2619.

Excavation for Drainage.—City, A. J. Hawkins, Engr., Birmingham, Ala.—Bids Jan. 23 for earth and rock excavation and rip-rap masonry, Sec. 3, Village Creek drainage project. See Construction News—Miscellaneous Construction.

Guards.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 5 for 10,075 flutter guards, pressed steel.

Hacksaw Frames.—See Miscellaneous Machinery, etc.

Levee.—U. S. Engr. Office, foot of Prytania St., New Orleans, La.—Bids Dec. 29 for 76,000 cu. yd. earthwork. See Construction News—Miscellaneous Construction.

Lens.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 7 for 20,350 laminated lens.

Lighting Fixtures.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Jan. 6 for exterior lighting fixtures for Federal buildings.

Linoleum.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Dec. 29 for 2000 sq. yd. linoleum, delivery Quantico, Va.

Mask Parts.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 7 for 4253 rubber face blanks, 520 uncut face blanks, 20,350 rubber gaskets, 10,110 flutter valves, deflectors and 7400 rubber hose tubes.

Miscellaneous Machinery, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Jan. 6 for motor driven drill and tapper; bids Jan. 13 for wrenches, cross-cut, bank, hand, miter box and compass saws, hacksaw frames, miter boxes, valve reseating outfits, ratchet braces, breast and hollow handle drills, reamers, motor driven rod and dowel machine.

Miscellaneous Machinery, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Jan. 6 for machinists' and pneumatic chisels and blanks, printing presses and printing equipment; bids Jan. 13 for clamps, cutters, holders, punches, sockets, bits, files and dies and motor driven band saws.

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TULSA
WACO
WASHINGTON
WHEELING
WILMINGTON, DEL.
WINSTON-SALEM
YOUNGSTOWN

Motor Truck.—U. S. Engr. Office, Huntington, W. Va.—Bids Jan. 5 for motor truck, 1-ton capacity.

Nozzles.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 6 for 7400 aluminum elbow nozzles.

Picket Boats.—U. S. Coast Guard Headquarters, Washington, D. C.—Bids Jan. 5 for building 10 to 15 cabin picket boats; specifications with Commandant, U. S. Coast Guard, Treasury Dept., Washington.

Pipe (Cast Iron).—See Sewer Construction.

Pipe (Reinforced Concrete).—See Sewer Construction.

Pipe (Vitrified).—See Sewer Construction.

Reamers.—See Miscellaneous Machinery, etc.

Printing Presses and Printing Equipment.—See Miscellaneous Machinery, etc.

Pumping Unit.—U. S. Engr. Office, Navy Bldg., Washington, D. C.—Bids Jan. 9 for motor and internal combustion engine pumping unit with all appurtenances and equipment.

Radio Sets.—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids Jan. 12 (new date) for radio telephone and telegraph transmitting sets.

Radio Tubes.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Dec. 30 for 40 radio tubes, delivery Quantico, Va.

Roads.—State of Alabama — Bids for 3 roads. See Construction News—Roads, Streets and Paving.

Road.—Maryland. See Construction News—Roads, Streets and Paving.

Roads.—State of Alabama—Bids for 18 roads. See Construction News—Roads, Streets and Paving.

Rod and Dowel Machine.—See Miscellaneous machinery, etc.

Saws.—See Miscellaneous Machinery, etc.

Saws (Band).—See Miscellaneous Machinery, etc.

Scale.—Div. and Post Quartermaster, Purchasing and Contracting Branch, Fort Sam Houston, San Antonio, Tex.—Bids Dec. 30 for 10-ton platform scale.

Sewage Pumping Plant.—See Sewer Construction.

Sewer Construction.—Bd. of Awards, Baltimore, Md., Milton J. Ruark, Sewerage Engr.—Bids Dec. 31 for sanitary sewers, Sanitary Contr. No. 278; work includes 3000 cu. yds. excavation, rectangular brick and conc. sewer, rein. conc. pipe sewer, vit. pipe sewer, manholes, etc.

Sewer Construction.—City of Donaldsonville, La., Sidney A. Marchand, Mayor—Bids Jan. 26 for construction of complete sanitary sewer system; work includes furnishing all labor, material and equipment necessary for construction of approximately 12 miles of main and lateral sewers varying in size from 8 to 12 in., 22,500 ft. of house connections, 5500 ft. of 12-in. c. i. pipe outfall, complete raw sewage pumping station and all other work required; plans, etc., from James W. Billingsley, Const. Engr., Interstate Bank Bldg., New Orleans.

Steel.—Commanding Officer, Augusta Arsenal, Augusta, Ga.—Bids Dec. 29 for 5870 lb. flat machine steel and 2200 lin. ft. steel tubes.

Steel, Sheaves, etc.—U. S. Engr. Office, Huntington, W. Va.—Bids Dec. 31 for high carbon round machine steel, blue annealed steel sheets, struc. steel angles, etc.

Tin Plate.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 5 for 5350 sheets coke tin plate.

Telephone Equipment.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Dec. 29 for telephone equipment, delivery Quantico, Va.

Transmitting Sets.—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids Jan. 2 for 5 to 25 transmitting sets, combined radio-telephone and telegraph.

Valve Reseating Outfits.—See Miscellaneous Machinery, etc.

Webbing.—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Jan. 6 for 14,250 yd. elastic webbing and 3930 yd. non-elastic webbing.

Well Pump.—City of Denmark, S. C., C. M. Cox, Clk.—Bids Jan. 1 for deep well pump; information on application.

(Continued from page 57)

Lockwood's Directory.—The fifty-sixth annual edition of Lockwood's Directory of the paper and allied trades, revised and brought up to date, has been issued by the Lockwood Trade Journal Co., Inc., New York. The publication contains lists of all paper, wood pulp and chemical fibre mills of the United States, Canada, Cuba, Mexico and South America; a classified list of products manufactured by the mills; a separate list of mill officials and their connections; a list under separate headings of the grades of paper stock and rags consumed by each of the more important mills in the United States and Canada; a list of dealers in paper specialties, and lists of paper dealers, wood pulp importers, rags and paper stock dealers, pulp testing chemists, converters of paper, wholesale and retail stationers, watermarks and brands and trade associations. It also has statistical information and advertisements.

Fuel-Burning and Steam Equipment.—The Combustion Engineering Corporation, New York, a subsidiary of the International Combustion Engineering Corporation, has issued General Condensed Catalog GC-6, devoted to fuel-burning and steam generating equipment. It is reprinted from the 1930-1931 Mechanical Catalog published by the American Society of Mechanical Engineers and presents brief descriptions, with illustrations, of the more important fuel-burning and steam-generating equipment manufactured by the Combustion Engineering Corporation. Among others it deals with several types of boilers made by the Hedges-Walsh-Weldner Co., Chattanooga, Tenn., also a subsidiary of the International Combustion Engineering Corporation. Products of Combustion Engineering Corporation are listed.

Fire Clay Refractories.—A motion picture film bearing the foregoing title, produced in 1923 under direction of the Bureau of Mines in co-operation with the Laclede-Christy Clay Products Company, St. Louis, was recently revised to include improvements since made, such as the modern method of burning refractories by tunnel kilns and use of improved equipment and machinery. The film is in three reels, dealing with manufacture and application of fire clay products, and requires about 45 minutes to project. Copies are distributed by the U. S. Department of Commerce, Bureau of Mines, Pittsburgh, Pa., rent free.

Building and Loan Annals.—A volume of 781 pages, Building and Loan Annals of 1930, has been published by the U. S. Building & Loan League, Ernest A. Hale, president; offices of secretary-treasurer and executive manager are in Cincinnati and Chicago, respectively. The publication is designed to present to building and loan interests the best thought on many important subjects and best methods and practice for handling building and loan business. It is divided into two sections, the first subdivided into nine sections and the second part into four. H. Morton Bodfish is executive manager of the League.

Power Pumps.—A new booklet, D-423-B1, superseding D-704, devoted to Worthington vertical triplex power pumps, has been issued by the Worthington Pump and Machinery Corporation, New York. In addition to descriptive data, tables and charts, the booklet presents illustrations showing applications of various models of these pumps. Southern sales offices of the Worthington company are maintained in Atlanta, Dallas, El Paso, Houston, Kansas City, New Orleans, St. Louis, Tulsa and Washington.

Aerial Photographic Surveys.—Of possible interest to engineers and geologists is a moving picture, "The Winged Camera," made by the Fairchild Aerial Surveys, Inc., New York. It depicts in considerable detail the production and application of aerial photographic surveys and is available without cost to technical societies, engineering and industrial organizations, universities, colleges, technical schools and research laboratories.

Engines and Draglines.—The Page Engineering Company, Chicago, Ill., have issued bulletin 800 A, devoted to Page Diesel engines and Diesel powered draglines. In addition to descriptive data, the bulletin presents illustrations showing applications of various machines to different kinds of excavating work. Specifications are submitted on different models, including the 430 model Walker Diesel dragline, now building and said to be the largest Diesel dragline ever made.

Industrial Conservation.—The Pure Iron Era, a magazine of industrial conservation published by the Armco International Corporation, New York, in its current issue carries interesting articles on: World's First Metal Base Highway Built of Pure Iron; Chilean Nitrate Industry; Galvanizing Pots, Their Material and Construction; Iron Paving Fifty Years Ago; Engineering Developments, and other subjects.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Allegheny Gas Sales Increase

Natural gas sales of the Allegheny Gas Corporation, largely owned by the Appalachian Gas Corporation, New York, amounted to 190,715,000 cubic feet for October, as compared with 94,778,000 cubic feet for the same month last year, a gain of about 101 per cent, which establishes a new high record for the company. The gain is attributed to general increase in industrial activity in the area served, and to recently completed interconnections of the company's producing fields.

Plastic Activities Coordinated

Plastic activities of the General Electric Company, Schenectady, N. Y., have been coordinated into one department known as the Plastic Department, with R. E. Coleman as manager and an advisory committee consisting of vice presidents J. G. Barry (chairman), W. R. Burrows and C. E. Eveleth.

(Continued on page 62)



FOR WATER REPELLENT MORTAR

WHEN Brixment is used, no water-proofing admixtures are necessary to produce a water-repellent mortar.

Brixment itself is made *permanently* water-resistant by a small amount of mineral oil, added during manufacture.

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CEMENT MANUFACTURERS SINCE 1830

BRIXMENT

for MASONRY and STUCCO



(Continued from page 60)

Link-Belt Developments in 1930

A diary of developments of the Link-Belt Company, Chicago, during 1930 summarizes the company's announcements of new additions to standard products, comprising a complete line of equipment for handling materials mechanically and for positive transmission of power. Outstanding announcements in chronological order include: Standard head drive for bucket elevators announced by H. W. Caldwell & Son Co., Chicago, a Link-Belt subsidiary; new automatic loader for skip hoists; Caldwell standard drives for screw conveyor; Hyper chain; meat slicing machine and super-capacity beef chipper; 1930 model "Grizzly" crawler bucket loader; new traveling water screen developed; Link-Belt Timken pillow block; Promal, a new metal for chains; Hyper drop forged sidebar SS124 rotary chain; improvement at Link-Belt Ewart works, Indianapolis; ingenious design in new P. I. V. variable speed transmission. Also there have been major developments in engineering and designing various types of equipment for specific installations.

\$300,000 Westinghouse Improvements

Expenditures in excess of \$300,000 will be made by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., on important changes and improvements at its works at South Philadelphia, Pa. A part of the manufacturing space will be converted into a new shop where all locomotive equipping and testing in connection with Westinghouse oil-electric and electric locomotives will be concentrated, this work having been carried on heretofore at the East Pittsburgh works. Plans also call for laying 1½ miles of additional railroad track and the handling of more than 12,000 cubic yards of material in the plant area, and in conjunction with the Pennsylvania Railroad and the city of Philadelphia, the electrification, relocation and regrading of 4 miles of track to be used as high speed test track. The schedule for beginning work, according to J. E. Barkle, works manager, was moved forward because of relieved production pressure. About six months will be required for construction.

Fuller Lehigh Changes

According to an official announcement, the Fuller Lehigh Company, Fullerton, Pa., a subsidiary of the Babcock & Wilcox Company, New York, will move its manufacturing operations and executive offices from Fullerton within a few months. Manufacturing operations will be consolidated with those of the Babcock & Wilcox Company at its plant at Barberton, Ohio, and the executive offices will be located at 85 Liberty street, New York. The Fuller Lehigh Company will continue its sales offices in principal cities of the country, and in order to continue satisfactory service to the cement trade and other users of its products in the East, it will maintain a stock of repair parts and Elverite products at Fullerton.

Electrical Output Increases

The Engineers Public Service Company, New York, reports electrical output in November of 182,966,112 kilowatt hours, an increase of 11 per cent over the corresponding month of 1929. Substantial increases are shown in power use in Louisiana and Texas, and a 6 per cent increase in Virginia, while properties in Georgia, Nebraska and in the Pacific northwest had a slightly decreased output as compared with November last year.

Standard Association President

Bancroft Gherardi, vice president and chief engineer of the American Telephone and Telegraph Company, has been elected president of the American Standards Association, New York. Cloyd M. Chapman, engineering specialist, of New York, was elected to the vice presidency. Mr. Gherardi, who has been a member of the board of directors of the Association, will direct its national and international standardization activities.

Commercial Vice-President

Claxton E. Allen, manager of the Southwestern district of the Westinghouse Electric and Manufacturing Company, has been elected a commercial vice-president of the company with headquarters in East Pittsburgh, Pa. In announcing Mr. Allen's election, F. A. Merrick, president, states that his duties will be to coordinate efforts for further effectiveness in the distribution of those of the company's products which pass through merchandising channels. In his new duties he will report to W. S. Rugg, vice-president in charge of sales.

Bucyrus-Erie 1930 Progress.

The Bucyrus-Erie Company, South Milwaukee, Wis., in a review of progress in 1930, points to a number of new products offered to the excavating industry, especially a 2¼-yard Diesel, the 52-B, said to combine high speed of operation and Diesel fuel economy; it has a slow speed 6-cylinder Diesel engine, independent swing and propel and oversize mounting for dragline work. Other products include: a 1-yard gasoline clamshell, convertible to shovel, dragline or crane; ¾-yard shovel, crane, clamshell and dragline; 1¼-yard steam shovel; 5-yard full revolving quarry shovel, and a 200-ton railway crane.

Plan to Stabilize Employment

President Gerard Swope of the General Electric Company, Schenectady, N. Y., announces a stabilization of employment plan, to become effective January 1, 1931, whereby employees of the Incandescent Lamp Department of not less than two years continuous service will be guaranteed 50 weeks work for 1931. Participation under the plan is optional and will become effective upon acceptance of 60 per cent of the eligible employees of each works and by the individual application of the employee who requests the company to deduct one per cent of his or her weekly earnings and credit the amount so deducted to such employee. The company has a lamp factory at St. Louis.

New Vice President of Frisco Lines

Harry L. Worman, superintendent of motive power of the St. Louis-San Francisco Railway Company at Springfield, Mo., was recently elected vice president in charge of operations of the Frisco lines and will assume office January 1, according to J. M. Kurn, president. He succeeds J. E. Hutchinson, vice president since 1924, who retires by reason of age under company rules but who will continue to handle such duties as may be assigned him under the title of special representative of the president, maintaining headquarters in Springfield. Mr. Worman will have charge of both the mechanical and transportation departments of the railroad and will direct the activities of about 7500 men in the shops and roundhouses and 15,000 in train service. His offices will be in the Frisco general office building at St. Louis.

Steel Bridge Design Prize

The American Institute of Steel Construction, New York, offers prizes aggregating \$1700 for the best design of a steel bridge. There will be two competitions, each having a first prize of \$500, a second of \$250, and a third of \$100; one competition is for engineering students attending school or college, the other is for architectural students.

Heads Fan Manufacturers

J. M. Frank, president of the Hg Electric Ventilating Company, Chicago, has been elected president of the National Association of Fan Manufacturers. R. E. Shaw, general sales manager of the B. F. Sturtevant Co., Boston, was elected vice-president, and E. B. Cresap, Chicago, secretary, the latter being the professional secretary.

Baltimore & Ohio Dividends

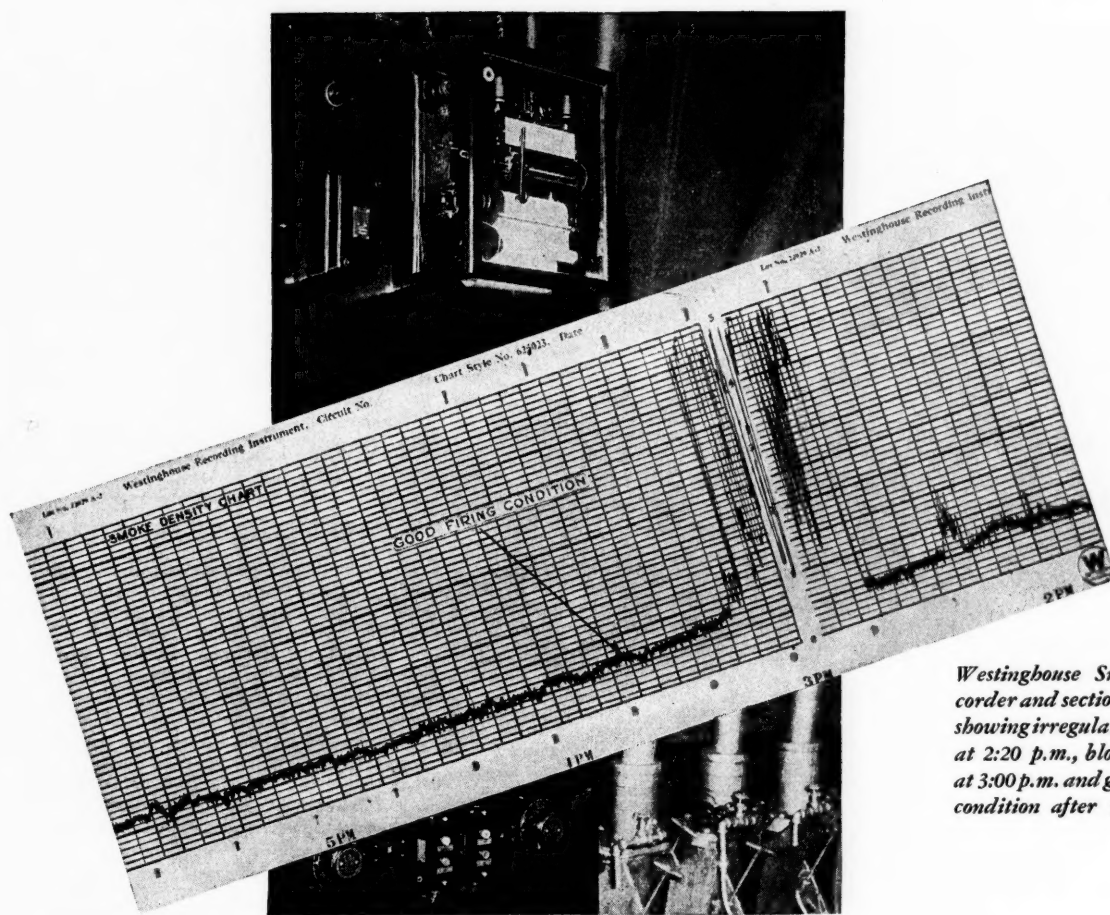
Directors of the Baltimore and Ohio Railroad Company have declared the regular quarterly dividend of one per cent on preferred capital stock of the company for the three months to December 31, 1930, payable March 2, 1931, to stockholders of record at the close of business on January 17, 1931. The Board also declared a quarterly dividend of one and three-quarters per cent on common capital stock of the company.

Protecting Workers' Eyes

Success of a mandatory rule for wearing goggles in certain forms of work, to prevent eye injury, was emphasized by Lewis H. Carris of the National Society for the Prevention of Blindness at a recent meeting of the New York State Industrial Safety Congress. Other beneficial devices reported to the organization included reduction of air pressure in blowing operations for cleaning purposes; use of castor oil for first aid in case of caustic burns of the eyes; attaching a notice, "Wear Your Goggles," to such tools as cold chisels, air drills, riveting hammers, concrete busters, and so on.

Big Orders for Insulators

Kenova, W. Va.—Two big orders booked by the Jeffery-Dewitt Co., manufacturers of heavy duty insulators, will assure capacity operation for at least six months, according to J. F. Sinclair, manager. One order was received from the British Government involving about \$250,000 and calling for the immediate shipment of \$150,000 worth of insulators to the Punjab Public Works Department in India, with other shipments to follow. A contract was also closed for insulating equipment for the new Hoover dam in Grand Canyon to cost about \$150,000. With the exception of the first two months, the Kenova plant has been in continuous operation at top capacity during the present year, employing about 200 operatives.



Westinghouse Smoke Recorder and section of chart showing irregular coal feed at 2:20 p.m., blowing soot at 3:00 p.m. and good firing condition after 3:15 p.m.

Tells COMBUSTION CONDITIONS *at a glance*

THE Photo-electric Smoke Indicator and Recorder tells the operator at a glance the conditions of combustion in the form of smoke density. And it also makes a continuous record of these conditions.

Past methods have depended upon the human eye—inaccurate because weather conditions vary, and altogether ineffective at night.

Here is a new, reliable and accurate instrument to promote increased combustion efficiency in every boiler room, with a reduction in the amount of smoke. Trial and test installations have proved its success.

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FINANCIAL NEWS

Bond Issues Proposed

Ark., Fort Smith—City may issue \$125,000 bonds for repairing fire stations and purchasing fire-fighting equipment.

Ark., Murfreesboro—Pike County Court authorized County Clk. to call for bids for \$50,000 courthouse building bonds.

Ark., Nashville—Nashville Special School Dist., A. T. Henry, Sec., Bd. of Education, postponed sale of \$45,000 bonds. 11-6

D. C., Washington—Washington Suburban Sanitary Comsn., T. Howard Duckett, Chmn., Tower Bldg., 14th and K Sts., N. W., rejected bids on \$300,000, 4½% bonds, guaranteed by Montgomery and Prince George's Counties, Md. 12-11

Fla., Jacksonville—Duval County defeated \$6,500,000 bonds for toll bridge over St. Johns River and for two additional roads to beaches. 11-13

Fla., Jacksonville—City Comsn., St. Elmo W. Acosta, Chmn., opens bids Jan. 20 for \$2,000,000 not to exceed 6% refunding bonds; will not consider bid for less than par.

Fla., Perry—Town, J. E. Powell, Clk., opens bids Dec. 29 for \$30,000 refunding bonds.

Ga., Statesville—School Committee of Statesville Graded School Dist., J. C. Fowler, Sec., School Dist., opens bids Dec. 29 for \$25,000, not to exceed 6% school building bonds.

La., Jackson—City, J. M. Johnson, Mayor, defeated \$20,000 water works system bonds. 11-27

Md., Towson—Baltimore County Comms. open bids Jan. 26 for \$500,000 4½%, \$1,000 denom. Metropolitan Dist. bonds.

Miss., Mayersville—Issaquena County Supvrs., J. S. Myers, Clk., opens bids Jan. 5 for \$40,000, not to exceed 6% serial county funding coupon bonds; will not be sold at less than par.

Mo., Clayton, St. Louis—City voted \$325,000 school bonds.

N. C., Charlotte—City Council plans issuing \$500,000 for widening and extending Graham St.

N. C., Mount Olive—Town, Augusta Williford, Clk., opens bids Dec. 29 for \$20,000, 6%, \$1000 denom. refunding bonds.

N. C., Statesville—Statesville Graded School Dist. of Iredell County, J. C. Fowler, Sec., opens bids Dec. 29 for \$25,000, \$1000 denom., not to exceed 6% bonds.

N. C., Wilkesboro—Wilkes County Comms. may issue \$127,000 bonds to take up notes outstanding against county and executed in anticipation of bond issue.

N. C., Winston-Salem—City plans issuing \$400,000 tax anticipation notes.

Okla., Anadarko—City Council ordered calling for bids for \$40,000 hospital bonds.

Okla., Blanchard—City defeated \$30,000 bonds for sewers, disposal plant, etc. 11-6

Okla., Duncan—City, Bd. of Education, C. P. Davis, Pres., soon vote on \$180,000 school bonds.

Okla., Hollis—Harmon County may issue \$175,000 road bonds.

Okla., Hominy—City, W. R. Brady, Mayor, voted \$150,000 electric light plant and distributing system. 12-4

Okla., Oklahoma City—City, E. M. Fry, City Mgr., defeated \$8,800,000 bonds for water works, sewers, street work, convention hall, city hall, fair park, comfort stations, hospital, purchase of park property, fire stations and equipment, municipal garage, police signal system and incinerator; reported, may vote again. 12-11

Okla., Pryor—City will vote on \$35,000 bath house bonds.

S. C., Cayce—City, R. C. Allen, Mayor, defeated \$55,000 water works and sewer system bonds; probably call second election early in 1931. 12-11

Tex., Aspermont—Old Glory Rural High School Dist. of Stonewall County will vote on \$28,000 bonds.

Tex., Beaumont—City Comsn. plans selling \$400,000 bonds: \$200,000, street; \$150,000, sewers; \$50,000, water works.

Tex., Colorado—Mitchell County probably call election in near future on \$100,000 lateral road bonds.

Tex., El Paso—El Paso Comms., E. B. McClintock, County Judge, called election for Jan. 17 on \$310,000 road bonds for McKelli-

gon Canyon flood control project, widening Ysleta-El Paso Highway and road at Fabens.

Tex., Fort Worth—City, O. E. Carr, Mgr., considering issuing \$750,000 city hall building bonds.

Tex., Houston—City, Harry A. Giles, City Controller, advises sale of \$3,730,000 bonds indefinitely postponed. 11-20

Tex., Huntsville—Huntsville Independent School Dist. voted \$150,000 high school bonds. 12-4

Tex., McCamey—City soon vote on city hall, fire station and jail bonds.

Tex., San Antonio—City, J. A. McIntosh, Pres., Bd. of Education, voted \$1,750,000 school bonds.

Tex., Tahoka—Lynn County Comms., reported, probably call election in few days on \$800,000 highway improvement bonds.

Tex., Texarkana—City, R. E. Floyd, Sec., rescinded action on election on \$120,000 bonds for purchasing additional ground for post office and Federal court building; votes Jan. 16 on \$90,000. 11-27

Tex., Wichita Falls—City, W. E. McBroom, Clk., probably vote in February or March on \$300,000 junior college building bonds. 10-23

Va., Falls Church—Town Council called special election among resident freehold property owners to decide whether general election shall be held on \$125,000 water system bonds.

Va., Richmond—Streets Committee of City Council recommended bond issues aggregating \$800,000 for sewer construction, smooth paving and guttering.

Bond Issues Sold

Ky., Covington—City Comms. sold \$205,000 water works improvement refunding bonds to M. M. Freeman & Co., Philadelphia, Pa., at 100.003. 12-18

Mo., Eldon—City, E. H. Austin, Clk., sold \$15,000, not to exceed 4½% city hall bonds to Prescott, Wright, Snider Co., Kansas City. 11-13

Okla., Tulsa—Tulsa County sold \$500,000 Tulsa State Fair bonds to First National Bank & Trust Co., Tulsa. 12-11

Tenn., Knoxville—City, Geo. R. Dempster, City Mgr., sold \$1,250,000 revenue anticipation bonds to Chase Securities Co., New York, and \$250,000 to Bankers Co., Inc., Boston, Mass., with 3½% interest rate at par.

Tenn., Nashville—State Funding Bd. sold \$2,500,000, 4½% one-year notes to Chemical Bank & Trust Co., New York, at par plus accrued interest.

Tex., Justin—Justin Independent School Dist., Mrs. J. H. Allen, Sec., School Bd., sold \$12,000 bonds to State of Texas, Austin.

Tex., Pecos—Reeves County Road Dist. No. 1, M. J. McKellar, County Judge, sold \$75,000, 5% road bonds to Conn Brown, San Antonio, at 95.00. 11-13

New Financial Corporations

Miss., Okolona—C. A. LaGrone, G. H. Shelton, Everett McCain, and associates organizing bank to replace two former institutions.

Tex., Frost—Frost National Bank, capital \$40,000, chartered; Jno. W. Matlock, Pres.; J. C. Beck, Cashier.

American National Bank, H. A. V. Parker, Pres., and Bank of Tidewater, E. L. Lash, Pres., both Portsmouth, Va., merged.

Bank of Alabama, R. A. Terrell, Pres., and Ensley National Bank, D. P. Knapp, Pres., both Ensley, Ala., merged.

Bank of Alexandria, T. W. Byrd, Pres., and Farmers' State Bank, M. G. Zinn, Pres., both Alexandria, Ky., plan merger.

Bank of Princeton, J. H. Lilly, Pres., and Virginian Bank & Trust Co., W. S. Dangerfield, Pres., both Princeton, W. Va., merging.

Consolidated Bank & Trust Co., Emmett C. Burke, Pres., and Commercial Bank & Trust Co., J. T. Carter, Pres., both Richmond, Va., merging, effective Jan. 1; use name and banking quarters of former.

Dallas Bank & Trust Co., Ernest R. Tennant, Pres., and Dallas National Bank, J. D. Gillespie, Pres., both Dallas, Tex., merged.

First National Bank, T. S. Ragland, Pres., and Gilmer State Bank, W. R. Stephens, Pres., both Gilmer, Tex., merged.

First National Bank, J. G. Wilkinson, Pres., Sweetwater, Tex., plans reorganizing.

Hutchings First National Bank, H. G. Hutchings, Pres., recently organized, acquired State Bank, T. J. Rees, Pres., both Siloam Springs, Ark.

People's Bank of Imboden, J. B. Peebles, Pres., Imboden, Ark., plans reorganizing.

People's Bank, T. W. Cantrell, Pres., and First National Bank, S. J. Reed, Pres., both Etowah, Tenn., merged; J. S. Reed, president of consolidated bank.

Perry State Bank, A. B. Banks, Pres., Perry, Ark., assumed assets and liabilities of Bank of Houston, A. B. Banks, Pres., Houston, Ark.

Pikeville National Bank, J. J. Moore, Pres., and Day & Night National Bank, T. J. Williamson, Pres., both Pikeville, Ky., merged.

Net Earnings Show Increase

Combined net earnings of all subsidiaries and affiliated companies of the Standard Gas and Electric Company, Chicago, for the year ended October 31, 1930, showed an increase of \$816,494 or 1.11 per cent, as compared with the 12-month period ended October 31, 1929. Gross earnings for the year ended October 31, 1930, amounted to \$154,375,938, as compared with \$152,970,313 for the similar period ended October 31, 1929, while net earnings amounted to \$73,854,359 for the year ended October 31, 1930, as against \$73,037,865 for the 12 months ended October 31, 1929.

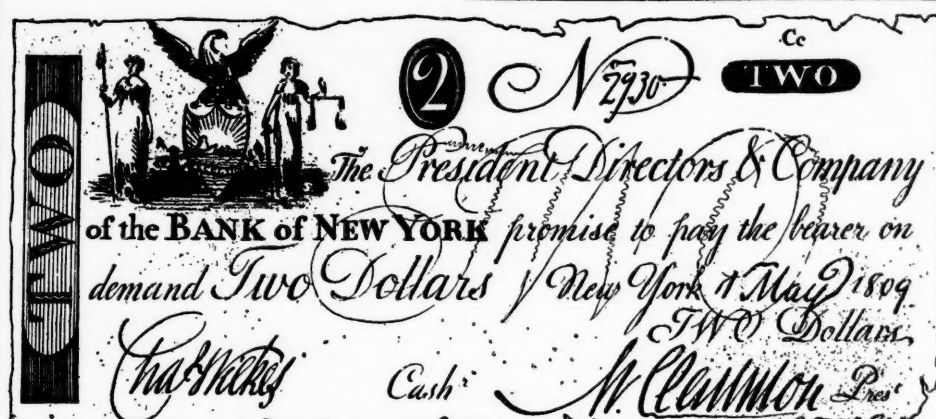
Power Companies' Statements

Gross earnings of the Houston Lighting & Power Company, Houston, Tex., a subsidiary of the National Power & Light Company, New York, amounted to \$723,119 for October, 1930, as compared with \$689,467 for October, 1929, while net earnings amounted to \$325,221, as against \$320,310. For the 12 months ended October 31, 1930, gross earnings amounted to \$8,798,005, as compared with \$7,814,613 for the 12 months ended October 31, 1929, and net earnings to \$4,223,657, as compared with \$3,673,935 for the similar period ended October 31, 1929. The balance shows an increase of 18 per cent.

The Carolina Power & Light Company, Raleigh, N. C., another subsidiary of National Power & Light, had gross earnings for October, 1930, of \$867,628, as compared with \$849,057 for October, 1929, while net earnings amounted to \$495,082 for October, 1930, as against \$477,595 for October, 1929. Gross earnings for 12 months ended October 31, 1930, amounted to \$8,949,747, compared with \$9,388,222 for the similar period ended October 31, 1929, and net earnings for the same period were \$4,998,507, compared with \$5,085,867 for the 12 months ended October 31, 1929.

For October, 1930, gross earnings of the New Orleans Public Service, Inc., New Orleans, La., subsidiary of the Electric Power & Light Corporation, New York, amounted to \$1,457,509, compared with \$1,224,391 for October, 1929. Net earnings amounted to \$501,267, as compared with \$437,314 for October, 1929. Gross earnings for 12 months ended October 31, 1930, amounted to \$17,474,591, as compared with \$16,174,937 for the similar period ended October 31, 1929, and net earnings to \$6,307,563, compared with \$5,831,351 for the 12 months ended October 31, 1929. This company shows an increased balance for the 12-month period ended October 31, 1930, of 13 per cent over the similar period for 1929.

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NEW YORK
CLEARING HOUSE
MEMBERSHIP
NUMBER ONE

\$1,500,000 Revenue Bonds

Knoxville, Tenn.—An issue of \$1,500,000 anticipated revenue bonds, bearing an interest rate of $3\frac{1}{2}$ per cent, has been sold by the City of Knoxville, George R. Dempster, city manager, to the Chase Securities Corp., New York, which took \$1,250,000 of the securities and the Bankers Company, Inc., Boston, which took \$250,000.

\$750,000 Bonds for City Hall

Fort Worth, Tex.—City council is considering a bond issue of \$750,000 to build a new city hall and is also considering a new city jail and central police station. Tentative plans announced by City Manager O. E. Carr call for a 12-story building on the site of the present city hall, the eight upper floors to be rented as office space. It is estimated that rentals would retire the bonds and defray the cost of the jail and police station.

\$1,250,000 for Schools

Louisville, Ky.—Plans are being prepared by J. Merrick Colley of this city for a school building program to involve an outlay of \$1,250,000 and work is expected to get under way by January 1. Construction involves a new \$300,000 building for Jacob Addition; \$300,000 building for the Oakdale school; \$350,000, 20-room addition for the James Russell Lowell school; \$200,000, 12-room addition to the Mannie Lee Fraser school, and a \$100,000, 6-room addition to the J. Stoddard Johnston school.

Business Opportunity

A correspondent informs the MANUFACTURERS RECORD that a manufacturing concern now making a standard washing machine is interested in disposing of this branch of their business. They want to sell the equipment and rights for manufacture of an aluminum tub washing machine, which is said to be perfected and now marketed through established dealers. The equipment is capable of an output of from 50 to 100 machines a day and the book value of equipment, tools and drawings of the complete machine is listed at \$215,369.

\$48,352,000 in Texas Budget

Austin, Tex.—Recommendations in the budget of the state board of control to be presented to the Legislature convening January 13, 1931, call for appropriations of \$48,352,168 for state departments and institutions for the two-year

period beginning September 1, 1931. As compared with the budget submitted to the last Legislature, these figures show an increase of \$2,992,401, and of this increase \$1,173,156 is due to ten new agencies of government created by the last Legislature.

Rebuilding Blast Furnace

Birmingham, Ala.—The Republic Steel Corp. is tearing down a blast furnace at its Thomas plant to make room for new blast furnace equipment to be installed there. The work will cost about \$150,000 and will require 8 weeks for completion. W. H. Oldham is vice-president in charge of Southern operations.

\$390,000 Courthouse Contract

Amarillo, Tex.—General contract to erect Potter County's new courthouse has been awarded to C. S. Lambie, Amarillo, at \$390,000, including mechanical work. The building will be 8 stories, 80 by 140 feet for the first four floors, while the fifth floor will be 60 by 140 feet, and the remaining three floors 60 by 76 feet. A jail will occupy the seventh and eighth floors. Townes, Lightfoot & Funk, Amarillo, are the architects and Page Bros., Austin, associate architects.

\$9,000,000 DRAINAGE PROJECT

Lake Okeechobee Surveys in Progress for Flood Control and Navigation

Okeechobee, Fla.—Surveys are now in progress to obtain necessary data for drawing specifications for the Lake Okeechobee flood control and navigation project, estimated to cost more than \$9,000,000 and of which local interests are required to provide \$2,000,000. Work authorized by Congress includes the construction of levees along the south and north shores of Lake Okeechobee to an elevation of 31 feet above sea level or 14 to 17 feet above the normal elevations of the lake, a distance of 70 miles; channel in the Caloosahatchee Canal and River to furnish a flood outlet capacity of 2500 cubic feet per second and a navigation channel at least 6 feet deep and 80 feet wide; navigation channel 6 by 80 feet in the St. Lucie River; channel 6 by 80 feet in Taylors Creek from Lake Okeechobee to Okeechobee City; navigation channel 6 by 80 feet along the south shore levee, and protective work to prevent shoaling in the St. Lucie Canal. Surveys are being made by the office of Lt. Col. L. V. Frazier, United States District Engineer, Jacksonville.

NATURAL GAS LINE CONTRACTS

United Pipe Line Corporation to Build From Texas Into Southwestern Louisiana

Kirbyville, Tex.—Contracts have been awarded by the United Pipe Line Corp., Houston, for construction of the main pipe line and laterals to transport natural gas from Kirbyville to southwestern Louisiana, supplying more than 40 towns and cities. The main line from Kirbyville to Franklin, La., has been awarded to the F. C. Youmans Co. and the Sexton Corp., both of Houston, the former to handle about 60 miles of the project from Kirbyville and the latter the remainder. The Texas Construction Co., Houston, will lay all branch lines and laterals, the work to be in direct charge of Frank B. Moore, of the company, who has opened offices in the Gordon Building at Lake Charles, La. The main line will serve De Quincy, Crowley, Welch, Jennings, Broussard, Youngsville, St. Martinville, New Iberia, Jeanerette and Franklin. It will consist of 46 miles of 14-inch pipe, 16 miles of 12-inch, 53 miles of 10-inch, 30 miles of 8-inch and 13 miles of 6-inch pipe. Six lateral lines, with a total mileage of 265.5 miles, will extend from the main line, one of which will consist of 29.5 miles of 3-inch pipe and 8 miles of 2-inch pipe, to serve Merryville and De Ridder. Other laterals will include the Vinton line to consist of 12 miles of 6-inch, 9 miles of 4-inch and 13 miles of 3-inch pipe, to serve Lake Charles, Westlake, Sulphur, Vinton and the Edgerly and Lockport oil fields; the Marksville line to consist of 69 miles of 6-inch, 17 miles of 4-inch, 29 miles of 3-inch and 7 miles of 2-inch pipe, to serve Kinder, Elton, Oakdale, Elizabeth, Cheneyville, Le Compté, Bunkie, Cottonport, Mansura, Hessemer and Marksville; the Washington line to consist of 13.5 miles of 6-inch, 22.5 miles of 4-inch and 5 miles of 3-inch pipe to serve Rayne, Church Point, Eunice, Opelousas and Washington; the Breaux Bridge line to consist of 5 miles of 6-inch and 8 miles of 3-inch pipe to serve Lafayette and Breaux Bridge, and the Abbeyville line to consist of 4 miles of 6-inch, 6 miles of 4-inch and 8 miles of 2-inch pipe, to serve Milton, Erath and Abbeyville.

All surveys for main lines have been completed and plans drawn for the river crossings. Multiple lines will be provided across the Sabine River, where three 10-inch mains will be laid, and across the Calcasieu River, where three 8-inch mains will be installed. The United Pipe Line Corporation has instructed the contractors to use local labor to the fullest extent throughout the area of construction.

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GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

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PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close January 20, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans Bureau, Room 764, Arlington Building, Washington, D. C., until 2.30 P. M., January 20, 1931, and then publicly opened, for furnishing all labor and materials and performing all work required for constructing and finishing complete at U. S. VETERANS HOSPITAL, INDIANAPOLIS, INDIANA, BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, cast stone, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, flag pole, steel sash, steel stairs with slate treads, steel shelving, cabinets and partitions, slate, metal and built-up roofing, roof ventilators, lightning conductors, metal lathing, plastering, carpentry, dumbwaiter, platform scale, metal weather strips, insect screens, window shades, painting, glazing, hardware, plumbing, vacuum cleaning system, refrigerating and ice making plant, zeolite water softening system, boiler plant, radial brick chimney, heating and ventilating, electrical work, electric elevators, nurses call system, fire alarm system and outside sewer, water, gas, steam and electric distribution systems. SEPARATE BIDS will be received for (a) General Construction (including plumbing, heating, electrical work and outside distribution systems); (b) Electric Elevators; (c) Zeolite Water Softening System; (d) Refrigerating and Ice Making Plant; (e) Radial Brick Chimney; all as set forth on bid form.

Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract, and in making awards the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be

GENERAL INFORMATION

About Proposal Advertising
in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Construction Division, Room 764, Arlington Building, Washington, D. C. Deposit with application of a check or Postal Money Order for \$40.00, payable to the TREASURER OF THE UNITED STATES, is required as security for safe return of the drawings and specifications within ten days after date of opening bids. GEORGE E. IJAMS, Director. December 15, 1930.

Bids close December 30, 1930.

Bridge Work

STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building bridge superstructure as follows:
Baltimore County, Contract No. B-175-43—
Fabrication and erection of structural steel girder superstructure for the proposed bridge over the tracks of the Pennsylvania Railroad Company at Bare Hills

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 30th day of December, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted. No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 9th day of December, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close January 20, 1931.

\$2,000,000 6% Refunding Bonds

Jacksonville, Fla.

Sealed proposals will be received by the City Commission of the City of Jacksonville, Florida, until 2.30 P. M., Tuesday, January 20, 1931, for the purchase of all or any part of Two Million (\$2,000,000.00) Dollars of "City of Jacksonville Refunding Bonds, Issue of 1931," numbered from 1 to 2000, both inclusive, in the principal amount of One Thousand (\$1000.00) Dollars each, dated January 15, 1931, bearing interest at a rate or rates not to exceed six (6%) per cent per annum, to be agreed upon by the City Commission of said city and the purchaser or purchasers of said bonds, as hereinafter more particularly mentioned, and maturing as follows: Sixty (60) of said bonds on January 15, 1934; the next One Hundred Twenty (120) of said bonds on January 15, 1935; the next Sixty (60) of said bonds on January 15, 1936; the next One Hundred Twenty (120) of said bonds on January 15, 1937; the next One Hundred Twenty (120) of said bonds on January 15, 1938; the next One Hundred Eighty (180) of said bonds on January 15, 1939; the next One Hundred Eighty (180) of said bonds on January 15, 1940; the next Two Hundred Forty (240) of said bonds on January 15, 1941; the next Three Hundred (300) of said bonds on January 15, 1942; the next Sixty (60) of said bonds on January 15, 1943; the next Three Hundred of said bonds on January 15, 1944 the next and remaining Two Hundred Sixty (260) of said bonds on January 15, 1945. As a part of and in connection with the proposals for said bonds, the City Commission will also receive bids for the amount of interest, not exceeding the rate of six (6%) per cent per annum, said bonds shall bear. Bidders may submit proposals for certain of said bonds of certain maturities bearing one rate of interest, and for certain other of said bonds of certain other maturities bearing another rate of interest; but no bidder may submit more than two rates of interest, and all proposals for interest shall be in multiples of one-quarter of one (¼%) per cent. Each of said bonds will have attached the requisite number of interest coupons, maturing semi-annually on the 15th days of July and January of each year, both principal and interest payable at Jacksonville or at the fiscal agency of the City of Jacksonville in the City of New York, State of New York, at the holder's option; the purchaser having the right to designate, if so desired, the fiscal agency at which the principal and interest of said bonds shall be payable. These bonds are direct obligations of the City of Jacksonville, and are registerable as to principal. In order to be considered, each bid must be in the form prescribed by the City, and must be accompanied by a cashier's check on one of the banks of Jacksonville, or upon some national bank, payable to the order of City Treasurer, Jacksonville, Florida, in an amount equal to two (2%) per cent of the par value of the bonds bid for. The bids should be in a sealed envelope, marked on the outside "Bid for Bonds," and addressed to Secretary City Commission, Room 13 City Hall, Jacksonville, Florida. Bids must be received at office of City Commission, Jacksonville, Florida, not later than 2.30 P. M., Tuesday, January 20, 1931; and at the same place delivery of the bonds sold will be made to the successful bidder on Wednesday, January 21, 1931, at 10 o'clock A. M. Said bonds are authorized by Ordinance No. U-133 of the City of Jacksonville and will be validated and confirmed by a decree of the Circuit Court of Duval County, Florida. The legality of said bonds will be approved by Thomson, Wood & Hoffman, of New York, whose opinion as to the legality of said bonds, or a duplicate thereof, will be delivered free of charge to the purchaser, or if more than one purchaser then to each of the purchasers. **NO BID FOR LESS THAN THE PAR VALUE OF SAID BONDS WILL BE CONSIDERED.** Printed circulars containing more definite and detailed information and blank forms for bids may be had upon application to M. W. Bishop, Secretary of the City Commission, Jacksonville, Florida.

ST. ELMO W. ACOSTA,

Chairman.

Attest:

M. W. BISHOP, Secretary.

Bids close January 6, 1931.

Bridges

Baton Rouge, La.

Sealed Proposals for the construction of the following projects will be received by the Louisiana Highway Commission, Room No. 614, Louisiana National Bank Building, Baton Rouge, Louisiana, until 9.45 o'clock A. M. on Tuesday, January 6, 1931. Proposals will not be received after this hour. At 10 o'clock A. M. of the same day and date they will be publicly opened and read in the Senate Chamber, in the State Capitol Building.

(BOND) F. A. PROJECT NO. 190-B-2, BOEUF RIVER BRIDGE AND SIX OTHER BRIDGES ON THE OAK GROVE-MER ROUGE HIGHWAY, located in West Carroll and Morehouse Parishes, Route No. 11.

DESCRIPTION—1 160 ft. Fixed Span; reinforced concrete piers on timber piles, 1350 ft. combined steel-concrete-timber trestle spans. Charge for plans \$2.50.

PROJECT NO. 463-B, TANGIPAHOA RIVER BRIDGE, KENTWOOD-SUNNY HILL HIGHWAY, located in Tangipahoa Parish, Route No. 71.

DESCRIPTION—2 40 ft. "I" Beam Spans; 22 crossotied pile trestle spans; earth approaches. Charge for plans \$1.00.

(BOND) F. A. PROJECT NO. 1402, RED RIVER BRIDGE, ARCHIE-MARKSVILLE HIGHWAY, located in Avoyelles Parish, Route No. 57.

DESCRIPTION—1 320 ft. Swing Span; 1 320 ft. Fixed Span; 1 100 ft. Fixed Span; reinforced concrete piers on timber piles; 14 31 ft. reinforced concrete deck girder spans on concrete piles; earth approaches. Charge for plans \$3.00.

(BOND) PROJECT NO. 2600, AMITE RIVER BRIDGE, BATON ROUGE-HAMMOND HIGHWAY, located in East Baton Rouge and Livingston Parishes, Route No. 7.

DESCRIPTION—1 250 ft. Fixed Span; reinforced concrete piers on timber piles; 38 30 ft. reinforced concrete deck girder spans on concrete piles. Charge for plans \$2.50.

(BOND) F. A. PROJECT NO. 5004, RED RIVER BRIDGE, COUShatta-MANSFIELD HIGHWAY, located in Red River Parish, Route No. 9.

DESCRIPTION—1 320 ft. Swing Span; 4 250 ft. Fixed Spans; 1 140 ft. Fixed Span; reinforced concrete piers; 8 31 ft. reinforced concrete deck girder spans on concrete piles; earth approaches. Charge for plans \$3.00.

(BOND) PROJECT NO. 6104, BOGUE CHITTO RIVER BRIDGE, COVINGTON-BOGALUSA HIGHWAY, located in St. Tammany Parish, Route No. 7.

DESCRIPTION—1 160 ft. Fixed Span; reinforced concrete piers on timber piles; 90 20 ft. combination steel-concrete-timber spans. Charge for plans \$2.00.

Full information and proposal forms are available at the offices of the Highway Commission at Baton Rouge. Plans and Specifications may be inspected there or will be furnished upon payment of amounts specified above (not to be refunded).

HARRY B. HENDERLITE,
State Highway Engineer.

O. K. ALLEN, Chairman,
Louisiana Highway Commission.

Bids close January 6, 1931.

Louisiana Highway Work

Baton Rouge, La.

Sealed Proposals for the construction of the following projects will be received by the Louisiana Highway Commission, Room No. 614, Louisiana National Bank Building, Baton Rouge, Louisiana, until 9.45 o'clock A. M. on Tuesday, January 6, 1931. Proposals will not be received after this hour. At 10 o'clock A. M. of the same day and date they will be publicly opened and read in the Chamber of the House of Representatives in the State Capitol Building.

(BOND) PROJECT NO. 738-A, TROUT-TULLOS Highway, located in La Salle Parish, Routes 108 and 474. Length 11.1 miles, width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 1100, OBERLIN-OAKDALE Highway, located in Allen Parish, Route 24. Length 14.0 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

ment and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 1403, MARKSVILLE-RAPIDES PARISH LINE Highway, located in Avoyelles Parish, Routes 5 and 57. Length 14.9 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 2300, HOMER-HAYNESVILLE Highway, located in Claiborne Parish, Route 12. Length 12.7 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 2951, VILLE PLATTE-REDELL Highway, located in Evangeline Parish, Route 22. Length 7.3 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

(BOND) PROJECT NO. 3250, ST. MARTINVILLE-NEW IBERIA Highway, located in St. Martin and Iberia Parishes, Route 25. Length 11.0 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 3451, HODGE-QUITMAN Highway, located in Jackson Parish, Route 5. Length 6.8 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

(BOND) PROJECT NO. 3852, THIBODAUX-RACELAND Highway, located in Lafourche Parish, Route 29. Length 8.1 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

(BOND) PROJECT NO. 4152, AMITE RIVER-DENHAM SPRINGS Highway, located in Livingston Parish, Route 7. Length 3.1 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$1.50.

(BOND) PROJECT NO. 4300, BASTROP-MONROE Highway, located in Morehouse and Ouachita Parishes, Routes 11 and 200. Length 10.8 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 4605, MONROE-BASTROP Highway, located in Ouachita Parish, Route 200. Length 11.6 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 5300, PACKENHAM-ST. BERNARD Highway, located in St. Bernard Parish, Routes 32 and 1. Length 8.7 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

(BOND) PROJECT NO. 6203, AMITE-TANGIPAHOA Highway, located in Tangipahoa Parish, Route 33. Length 10.4 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 6501, ROUTES 11 AND 15 THROUGH FARMERVILLE Highway, located in Union Parish, Routes 11 and 15. Length 8.7 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

(BOND) PROJECT NO. 6601, KAPLAN-ABBEVILLE Highway, located in Vermilion Parish, Route 25. Length 11.6 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.50.

(BOND) PROJECT NO. 7000, PORT ALLEN-LIVONIA Highway, located in West Baton Rouge and Pointe Coupe Parishes, Route 1. Length 20.3 miles, width 20 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$3.50.

(BOND) PROJECT NO. 7301, JONESBORO-TANNEHILL Highway, located in Winn-Jackson Parishes, Route 5. Length 17.0 miles, width 18 ft. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$3.00.

Full information and proposal forms are available at the offices of the Highway Commission at Baton Rouge. Plans and Specifications may be inspected there or will be furnished upon payment of amounts specified above (not to be refunded).

HARRY B. HENDERLITE,
State Highway Engineer.

O. K. ALLEN, Chairman,
Louisiana Highway Commission.

Bids close December 30, 1930.

Maryland Highway WorkSTATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building one section of State Highway as follows: Anne Arundel County, Contract No. AA-105-72—Federal Aid Project No. 214B—One section of State Highway along the General's Highway from the end of Contract No. AA-37 at Gots to Iglehart, a distance of 2.71 miles (concrete) will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 30th day of December, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 16th day of December, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close January 6, 1931.

Bridges

Richmond, Va.

Sealed bids will be opened Dept. of Highways, Richmond, Va., 10 A. M. Tuesday, January 6, 1931. Rt. 12, Proj. 566B1, 63 ft. br. cu. yds. conc. 272, lbs. reinf. steel 8330, struct. steel 57,000, lin. ft. piles 2200. Rt. 12, Proj. 566B2, 32 ft. 6 in. br. cu. yds. conc. 84, lbs. reinf. steel 13,195, Brunswick County. Details obtained upon request.

Bids close January 1, 1931.

Deep Well Pump

Denmark, S. C.

Bids will be received by the City of Denmark, S. C., for the purchase of a deep well pump. Information and specification may be secured and all bids should be filed with the City Clerk on or before January 1st, 1931.

C. M. COX, City Clerk.

Bids close January 23, 1931.

Excavation for Drainage

Birmingham, Ala.

Sealed proposals will be received by the undersigned until ten o'clock A. M., Friday, January 23, 1931, for certain earth and rock excavation and rip-rap masonry which is proposed to be done by the City of Birmingham on Section Three of Village Creek draining project (from Avenue W, Ensley, to Tenth Street, West).

The approximate principal quantities being as follows: 149,200 Cu. Yds. Earth Excavation, 65,000 Cu. Yds. Rock Excavation and 700 Sq. Yds. Rip-Rap Masonry.

Specifications may be obtained and plans examined at this office. The right is reserved to reject any or all proposals.

A. J. HAWKINS,
City Engineer.

Bids close January 26, 1931.

Sanitary Sewer System

Donaldsonville, La.

Sealed proposals will be received by the Commission Council at City Hall, Donaldsonville, La., until 11 A. M. January 26, 1931, for the construction of a complete sanitary sewer system for the City.

The work will include the furnishing of all labor, material and equipment necessary for the construction of approximately 12 miles of main and lateral sewers varying in size from 8 to 12 inches, 22,500 lineal feet of house sewer connections, 5550 feet of 12-in. cast-iron pipe outfall, a complete raw sewage pumping station, and all other work and appurtenances specified or required.

Plans and specifications are on file in the Mayor's Office, Donaldsonville, La., and in the office of James W. Billingsley, Consulting Engineer, Interstate Bank Building, New Orleans, where they may be examined free of charge. Copies of same may be obtained from the Consulting Engineer upon payment of \$10.00, which will not be returned.

Proposals must be submitted on the special form provided by the Consulting Engineer.

A certified check or cash in the amount of 5% of the total bid price, deposited in accordance with the terms and conditions of the Specifications, will be required of the bidder.

A bond in the amount of the total contract price will be required of the successful bidder.

The right is reserved to reject any or all bids and to waive technicalities.

SIDNEY A. MARCHAND,

Mayor.

JAMES W. BILLINGSLEY,
Consulting Engineer.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**TIMBER AND TIMBER LANDS**

13,000 ACRES of hardwood timber land for sale at a great sacrifice.

T. B. FINLEY,
North Wilkesboro, N. C.

FOR SALE

Sound Square Edge Red and White Oak Timbers sawn to size.

HOUSTON BROS., Vicksburg, Miss.

ACREAGE BARGAINS—We have several desirable tracts; some are well stocked with fast growing pine timber. Many have enough advance growth to pay a good return on the investment above carrying charges during the holding period. Let us select the tract and manage it, taking our remuneration as a percentage of net earnings.

THE JAMES D. LACEY COMPANY,
1409 Barnett Bldg., Jacksonville, Fla.

PINE SEEDS

1930 CROP, WELL CLEANED, highest germination, Longleaf Pine seed, \$3.00 per pound. Slash Pine seed \$5.00 per pound. Loblolly Pine seed \$6.00 per pound. Shortleaf Pine seed \$7.50 per pound. Also seedlings reasonably. Full reforestation information on application. Write for catalog.

F. M. ELLIS, Griffin, Ga.

FARM, FRUIT AND TRUCK LANDS**FLORIDA**

FOR SALE—Orange River half grapefruit, half budded orange grove 7 miles Fort Myers. Half mile riverfront; 150 acres land, 50 uncleared, 50 cleared, 50 in grove with crop; all improvements; fully bearing, fine condition; \$40,000, terms.

R. A. HENDERSON, JR., Fort Myers, Fla.

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RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 28c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LANDS**FLORIDA****FOR SALE**

Beautiful complete hundred acre Gulf Coast Island, finely located near good town, railroad, and highway. Rich soil, plenty trees, good shade. Delightful place for winter home. Bargain for quick sale. Address No. 9071, care Manufacturers Record.

FARM, FRUIT AND TRUCK LANDS**FLORIDA**

FORTUNES FOUNDED purchasing Florida land now. Tracts best land five to eight dollars per acre. Timber on some worth more than price. Why not investigate? Write Tucker, 315 N. Ky. Ave., Lakeland, Fla.

TEXAS

LOWER RIO GRANDE Valley orchards and acreage at actual value. Owner's price direct to you. Send for list. ROBERTS REALTY CO., Realtors, McAllen, Tex.

VIRGINIA PLANTATION

MAPPED BY Thomas Jefferson's father, 1755. Also by Patrick Henry's father. 1500 acres highly cultivated and 1500 acres in valuable timber. Fine hunting, deer, turkeys, etc. Nine miles Pamunkey River frontage. Good springs, fertile soil. Exquisite vista from Master Dwelling. Hard surface road from Federal Highway No. 1; 25 miles from Richmond. Ample barns. Fences well kept. Price \$90,000.

BLAKE & DUDLEY, INC.,
RICHMOND, VIRGINIA.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

FOR SALE, REASONABLE—Telephone business in good section of North Carolina on paved highway. If interested address No. 9064, care Manufacturers Record.

BUSINESS OPPORTUNITIES

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

BIDS ASKED—The Florida CONFIDENTIAL INDUSTRIAL BULLETIN brings you advance listings of every bid or proposal asked by state, city, county or private interests, roads, bridges, general construction, schools, churches, dredging, drainage, irrigation, bonds, supplies, equipment, labor and materials. Send for free specimen copy. Florida Industrial Bulletin, Box 9118, Tampa, Fla.

FINANCIAL

TEXAS—Investments offered in the great Southwest. Telephone, electric light, gas, water works, real estate, first mortgages. BOX 1929, AMARILLO, TEXAS.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,
Asheville, N. C.

INDUSTRIAL PLANTS

FOR SALE
SHEET METAL PLANT
fully equipped and operating. Sheets and angles available at mills here. Address
H. McDERMOTT,
P. O. Box 42, Birmingham, Ala.

INDUSTRIAL PLANTS

FOR SALE
Complete plant for the manufacture of Brick and Tile
Excellent Shale Clay Bank
Products of Unusually Good Quality
Freight Rates Favorable
Labor Plentiful
Private Spur Track
General Condition of Plant Good
For particulars write
P. O. BOX 51, WINCHESTER, KY.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

FACTORY AND WAREHOUSE SITES

FOR MANUFACTURING OR WAREHOUSE
Corner Lot 99x340.
Well located on good street and extending back to tracks of three railroads. A special price to a quick buyer.
F. C. ABBOTT & CO.,
201 Johnston Building,
Charlotte, N. C.

33 years in Charlotte Real Estate.

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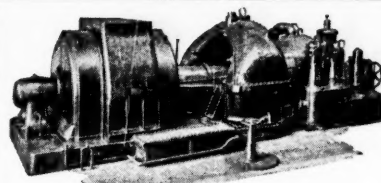
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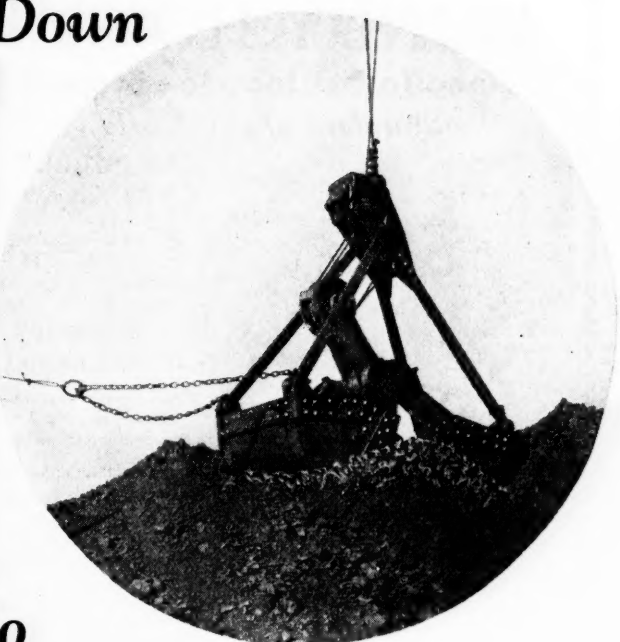
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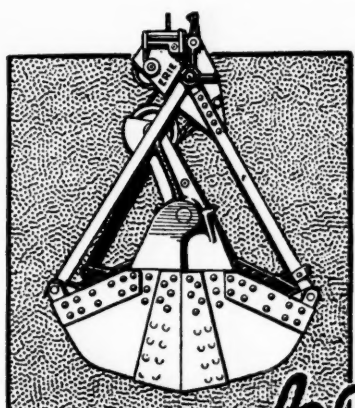
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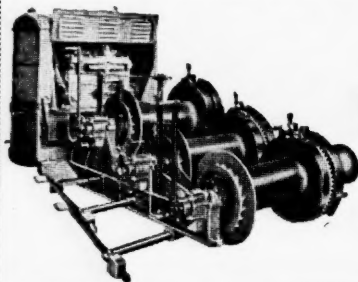
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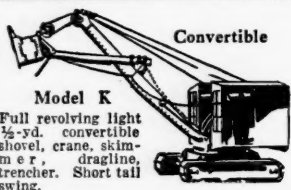


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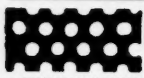
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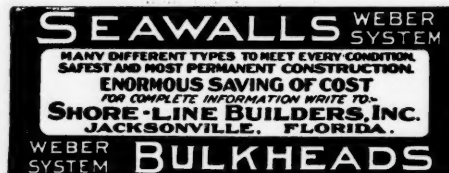
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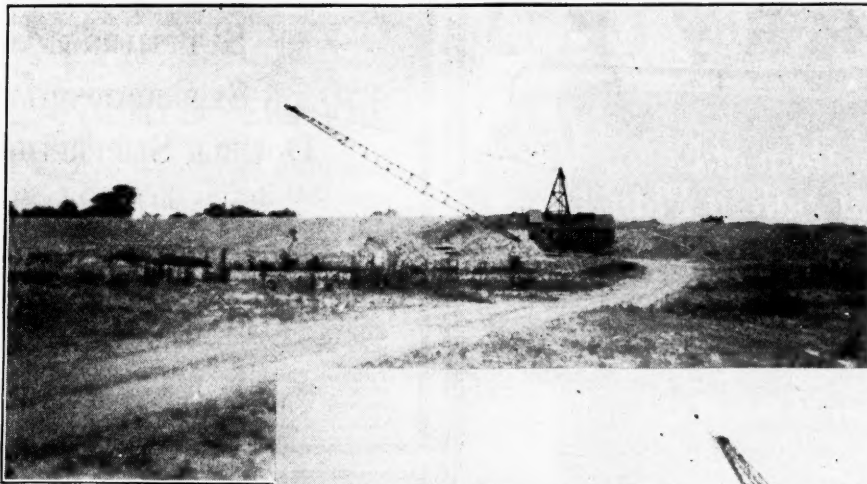
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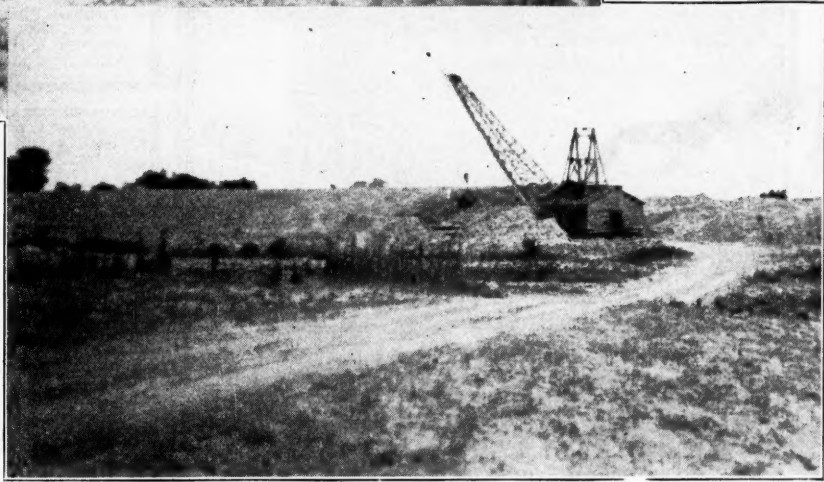
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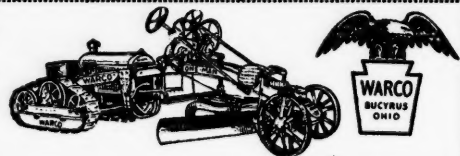
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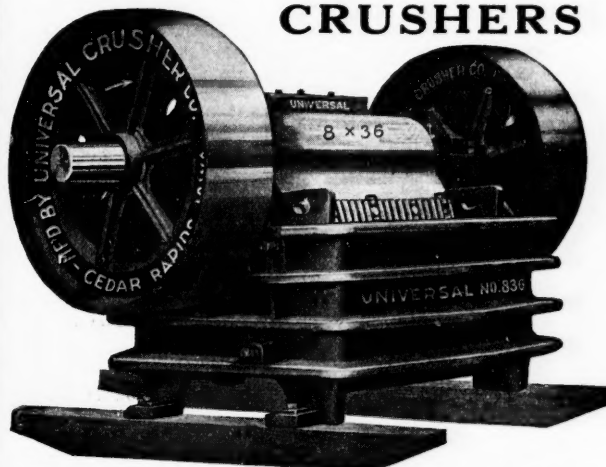
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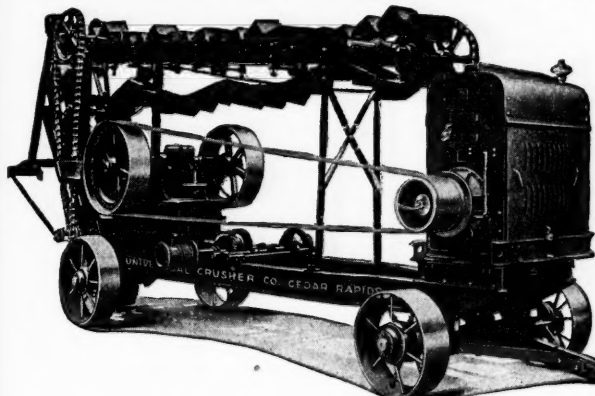
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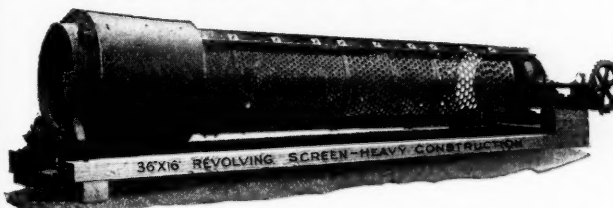
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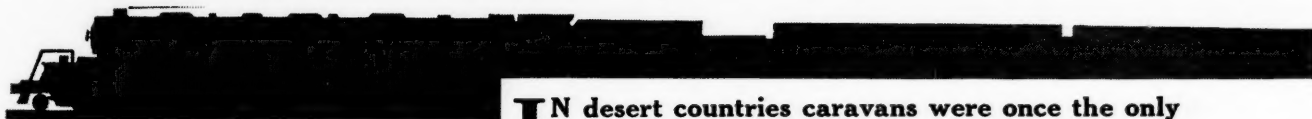
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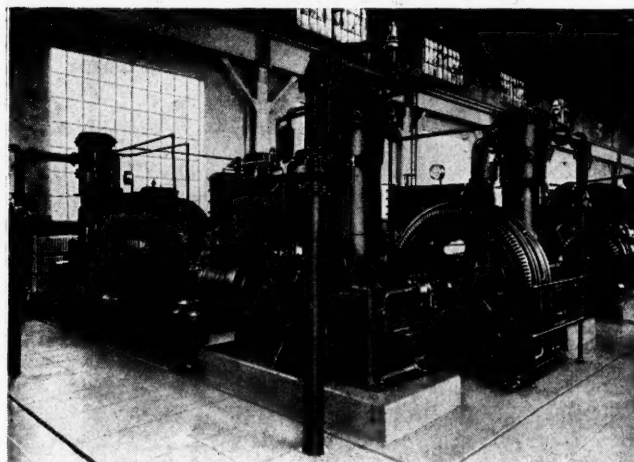
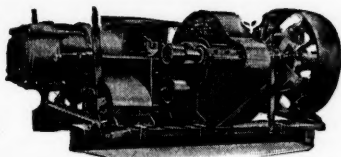
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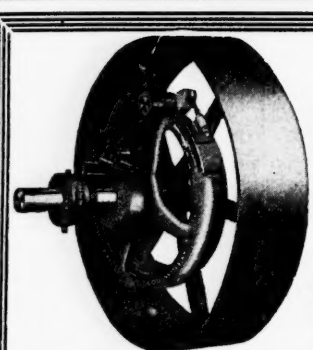
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Kaiser Klock Co., L. E., Baltimore, Md.

CLOTH (Wire.)

Newark Wire Cloth Co., Newark, N. J.

CLUTCHES (Friction.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—and Ash-Handling Mch.

Allen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Webster & Weller Mfg. Cos., Chicago.

—Bunkers (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Tipples.

American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

COATINGS (Protective.)

Headley Emulsified Products Co., Philadelphia, Pa.

COCKS (Service.)

Merco Nordstrom Valve Co., San Francisco, Calif.

COKE.

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)

U. S. Pipe & Fdry. Co., Burlington, N. J.

COMPRESSORS (Gasoline Extractions.)

Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Block Machinery.)

Blystone Mfg. Co., Cambridge Springs, Pa.

—Construction (Reinforced.)

Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Rust Engineering Co., Birmingham, Ala.

—Floor Slabs.

Federal-American Cement Tile Co., Chicago.

—Information Only.

Portland Cement Assn., Chicago, Ill.

—Mixers.

Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Equipment Corp. of America, Chicago, Ill.
Jaeger Machine Co., Columbus, Ohio.

—Pipe Machinery (See Pipe Machinery, Concrete.)

—Placing Equipment.

National Equipment Corp. (Insley Division), Milwaukee, Wis.

—Road Curing.

McEverlast, Inc., Los Angeles, Cal.

—Roofing Tile.

Federal-American Cement Tile Co., Chicago.

CONDENSERS.

Ingersoll-Rand Co., New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)

Western Electric Co., New York, N. Y.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Bridge.)

Kansas City Bridge Co., Kansas City, Mo.
Snare Corp., Frederick, New York.

—(Drainage and Dredging.)

Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

—(Electrical.)

Walker Electrical Co., Atlanta, Ga.
Warner Service Co., Knoxville, Tenn.

Webb Electric Co., Anderson, S. C.

—(Foundations and Dams.)

Snare Corp., Frederick, New York, N. Y.

—(General.)

Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Burkes, Inc., J. V. & R. T., New Orleans.
Charleston Constructors, Inc., Charleston, S. C.
Cornell Young Co., Inc., Macon, Ga.
Copper Co., Inc., John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Saville, Inc., Allen J., Richmond, Va.

Smallman Construction Co., Birmingham.
Snare Corp., Frederick, New York, N. Y.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Industrial Buildings.)

Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Copper Co., Inc., John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Smallman Construction Co., Birmingham.
Snare Corp., Frederick, New York, N. Y.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—Mill Village.

Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)

Jennings & Co., Floyd, Atlanta, Ga.

—(Power Piping.)

Poe Piping & Heating Co., Greenville, S. C.

—(Power Plants.)

Snare Corp., Frederick, New York, N. Y.

—(Railroad.)

Cornell-Young Co., Inc., Macon, Ga.

—(Reinforced Concrete.)

Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)

Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., J. B., Atlanta, Ga.

—(Sewerage and Waterworks.)

Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

—(Sprinkler System.)

Poe Piping & Heating Co., Greenville, S. C.

—(Water-Works.)

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—Machinery and Supplies.

(New.)

Bay City Shovel, Inc., Bay City, Mich.
Erie Steel Construction Co., Erie, Pa.
W-K-M Co., Inc., Houston, Texas.

—Machinery and Supplies.

(Used.)

Cohen, Chas. F., Lima, O.
Gulton, Harry F., New York, N. Y.
Marine Metal & Supply Co., New York.
Phillips, Inc., Chester & Chicago.
Sawler Mch. & Equip. Co., Baltimore.

CONTRACT WORK WANTED.

(See following classifications.)

Boiler and Tank Work.

Castings.

Forgings.

Foundries and Machine

Shops.

Machinery (Special.)

Ornamental Iron Work.

Patterns.

Sheet Metal Work.

Structural Steel and Iron.

Welding Plants.

CONVEYING AND ELEVATING

MACHINERY.

Chain Belt Co., Milwaukee, Wis.
McLanahan and Stone Machine Co., Hollidaysburg, Pa.
Universal Crusher Co., Cedar Rapids, Ia.
Webster & Waller Mfg. Co., Chicago.

CONVEYORS (Portable, Power-

Driven.)

Clark Tractor Co., Battle Creek, Mich.

CORRESPONDENCE SCHOOLS.

International Correspondence Schools, Scranton, Pa.

COST SERVICE.

Le Baron, E. T., Jacksonville, Fla.

COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.

—Mill Machinery.

Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS.

Veeder-Root, Inc., Hartford, Conn.

COUPLINGS.

Goldens' Fdy. & Mch. Co., Columbus, Ga.

—(Flexible.)

Diamond Chain & Mfg. Co., Indianapolis, Ind.

—(Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

CRANES

Industrial Brownhoist Corp., Cleveland, O.
National Equipment Co. (Insley, Koehring, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Whiting Corp., Harvey, Ill.

—(Cantilever, Gantry.)

Bedford Foundry & Machine Co., Bedford, Ind.

Whiting Corp., Harvey, Ill.

—(Crawler.)

Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

—(Crawling Tractor.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

—(Electric Traveling.)

Bedford Foundry & Machine Co., Bedford, Ind.

Erie Steel Construction Co., Erie, Pa.

Harnischfeger Corp., Milwaukee, Wis.

Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

Whiting Corp., Harvey, Ill.

—(Full Circle Steam and Elec-

tric.)

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Gasoline.)

Harnischfeger Corp., Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Jib.)

Whiting Corp., Harvey, Ill.

—(Locomotive.)

Bucyrus-Erie Co., Erie, Penna.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Material Handling.)

Bay City Shovel, Inc., Bay City, Mich.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

Universal Crane Co., Lorain, Ohio.

—(Traveling Hand Power.)

Whiting Corp., Harvey, Ill.

CRAWLERS (Tractor.)

Riddell Co., W. A., Bucyrus, Ohio.

Trackson Co., Milwaukee, Wis.

CREOSOTED MATERIALS.

Amer. Creosote Wks., Inc., New Orleans.
Delaware Wood Preserving Co., Phila.
Savannah Creosoting Co., Savannah, Ga.

CREOSOTED TIMBER.

Ayer & Lord Tie Co., Chicago, Ill.
Brown Wood Preserving Co., Louisville, Ky.

CREOSOTE OIL.

Amer. Creosote Wks., Inc., New Orleans.
Ayer & Lord Tie Co., Inc., Chicago.

CREOSOTING (Wood Materials.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Hattiesburg, Miss.

Savannah Creosoting Co., Savannah, Ga.

Wales Wood-Preserving Co., Norfolk, Va.

CROSS-ARMS (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Savannah Creosoting Co., Savannah, Ga.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Eppinger & Russell Co., New York, N. Y.

Savannah Creosoting Co., Savannah, Ga.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

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crete and Ballast.)

American Limestone Co., Knoxville, Tenn.

Borley & Co., W. W., Roanoke, Va.

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Fuller Lehigh Co., Fullerton, Pa.

—(Rock.)

Universal Crusher Co., Cedar Rapids, Ia.

CRUSHING and Pulverizing Ma-

chinery.

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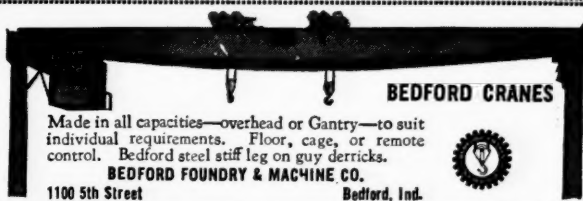
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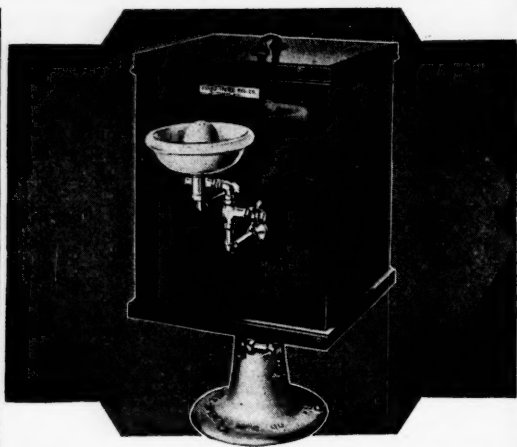
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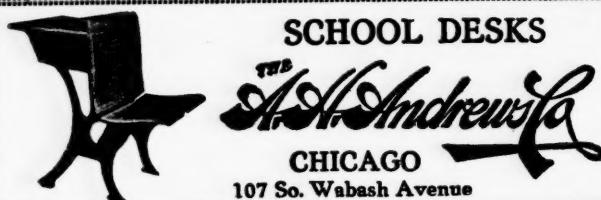
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Tenn. Metal Culvert Co., Nashville, Tenn.
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Lidgerwood Mfg. Co., Elizabeth, N. J.
Sasgen Derrick Co., Chicago, Ill.

(Used.)
Galer Equipment Corp., New York, N. Y.

DESKS (School.)
Andrews Co., A. E., Chicago, Ill.

DITCHING MACHINERY.
Bay City Shovels, Inc., Bay City, Mich.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Owen Bucket Co., The, Cleveland, O.

DOORS (Bronze.)
Michaels Art Bronze Co., Covington, Ky.

(Fire.)
Merchant & Evans Co., Philadelphia, Pa.
Richards-Wilcox Mfg. Co., Aurora, Ill.

(Fireproof, Air Chamber.)
Wilson Corp., The J. G., New York.

(Kalamend.)
Moeschl-Edwards Corr. Co., Cincinnati.

(Rolling, Steel and Wood.)
Kinneer Mfg. Co., The, Columbus, Ohio.

(Steel.)
Truscon Steel Co., Youngstown, Ohio.

(Tubular Steel.)
Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES.
Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.
Bucyrus-Erie Co., Erie, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Monaghan Mfg. Corp., Chicago, Ill.

National Equipment Corp. (Kochring, Insley) Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Sauerman Bros., Chicago, Ill.

Thew Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

(Walking.)
Monaghan Mfg. Corp., Chicago, Ill.

DREDGES (Dipper, Elevator, Hydraulic.)
Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Pa.
Ellicott Machine Corp., Baltimore, Md.

DREDGING (River and Harbor Improvement.)
Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

(Machinery.)
Ellicott Machine Corp., Baltimore, Md.

Hayward Co., The, New York.

DRILLING CONTRACTORS.
Acker Drill Co., Scranton, Penna.

Mott Core Drilling Co., Huntington, W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Saltville, Va.

Sprague & Henwood, Inc., Scranton, Pa.

DRILLS (Artesian Well.)
Virginia Machinery & Well Co., Inc., Richmond, Va.

Hand
Gardner-Denver Co., Quincy, Ill.
(Core, Prospecting, etc.)
Acker Drill Co., Scranton, Penna.

(Electric.)
Gardner-Denver Co., Quincy, Ill.

Sullivan Mch. Co., Chicago.

(Pneumatic.)
Gardner-Denver Co., Quincy, Ill.

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

DRINKING FOUNTAINS.
Bundie-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY.
Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)
Ripley Fdy. & Mch. Co., Ripley, Ohio.

DRY KILNS and Equipment.
Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.
American Process Co., New York, N. Y.

DUMP TRUCK BODIES and HOISTS.
Easton Car & Construction Co., Easton, Pa.

DUST-PROOFING (Concrete.)
Sonneborn Sons, Inc., L., New York.

DIESTUFFS.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

Hercules Powder Co., Inc., Wilmington, Del.

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Babcock & Wilcox Co., New York.

ELECTRICAL Instruments and Supplies.
Adam Electric Co., Frank, St. Louis.

General Electric Co., Schenectady, N. Y.

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(Machinery (Generators, Motors, etc., New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Rockford Power Machy. Co., Rockford, Ill.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

(Machinery (Generators, Motors, etc., Used.)
Delta Equipment Co., Philadelphia, Pa.

Electric Service Co., Cincinnati, Ohio.

General Electric Co., Schenectady, N. Y.

Gregory Electric Co., Chicago.

Nussbaum & Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., The, Phila., Pa.

Rockford Power Machy. Co., Rockford, Ill.

(Machinery Repairing (Motors, Generators, etc.)
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Gregory Electric Co., Chicago.

ELECTRIC LIGHTING.
General Electric Vapor Lamp Co., Hoboken, N. J.

ELECTRIC SHOVELS (See Shovels.)

ELEVATOR Cables.
Leschen & Sons Rope Co., A., St. Louis.

ELEVATORS (Electric.)
American Elevator & Machine Co., Inc., Louisville, Ky.

Miller Co., St. Louis, Mo.

(Hand and Belt Power.)
American Elevator & Machine Co., Inc., Louisville, Ky.

Miller Co., St. Louis, Mo.

(Hydraulic.)
American Elevator & Machine Co., Inc., Louisville, Ky.

ENGINEERS (Airports.)
MacElwaine & Crandall, Inc., Cambridge, Mass.

Shaw Co., Russell B., St. Louis, Mo.

(Appraisal.)
Ballinger Co., Philadelphia, Pa.

Battery & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thorndike, Boston, Mass.
Ford, Bacon & Davis, Inc., New York.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.

Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Aviation.)

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)

Atlantic Bridge Co., Greensboro, N. C.
Billingsley, James W., New Orleans, La.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Howerton Engineering Co., Asheville, N. C.
Steel & Leiby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H., Minneapolis, Minn.
Whitman, Requaardt & Smith, Balto., Md.

—(Chemical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Dow & Smith, New York, N. Y.
Flood & Co., Walter H., Chicago, Ill.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southern Products Corp., New Orleans.

—(Civil.)

Airmap Corp. of Amer., Brooklyn, N. Y.
Battey & Kipp, Inc., Chicago, Ill.
Charlton & Davis, Ft. Lauderdale, Fla.
Fuller & McClintock, New York, N. Y.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harrib Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Hills Co., George B., Jacksonville, Fla.
MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Spoon & Lewis, Greensboro, N. C.
Spring, Charles Herbert, Greensboro, N. C.
Steel & Leiby, Knoxville, Tenn.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.

—(Consulting.)

Airmap Corp. of Amer., Brooklyn, N. Y.
Charlton & Davis, Ft. Lauderdale, Fla.
Converse & Co., J. B., Mobile, Ala.
Cramer, Robert, Milwaukee, Wis.
Engineering Service Corp., Houston, Tex.
Harza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Herty, Charles H., New York City.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Smith, Elroy G., Augusta, Ga.
Stillman & Van Sclen, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Battey & Kipp, Inc., Chicago, Ill.
Byllesby Engineering and Management Corp., Chicago, Ill.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Harza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sirrime & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
Wheeler, Walter H., Minneapolis, Minn.
White Engineering Corp., J. G., New York.

—(Drainage and Irrigation.)

Cramer, Robert, Milwaukee, Wis.
Ford, Bacon & Davis, Inc., New York.
Fuller & McClintock, New York, N. Y.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.

—(Efficiency.)

Ernst & Ernst, New York, N. Y.
Whitman, Requaardt & Smith, Balto., Md.

—(Electrical.)

Battey & Kipp, Inc., Chicago, Ill.
Engineering Service Corp., Houston, Tex.
Hoosier Engineering Co., Chicago, Ill.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Mullergren, Arthur L., Kansas City, Mo.
Sanderson & Porter, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.
Webb Electric Co., Anderson, S. C.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

—(Electric-Light and Power Plants.)

Battey & Kipp, Inc., Chicago, Ill.
Byllesby Engineering and Management Corp., Chicago, Ill.
Cramer, Robert, Milwaukee, Wis.
Ford, Bacon & Davis, Inc., New York.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Mullergren, Arthur L., Kansas City, Mo.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Phila., Pa.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
White Co., Gilbert C., Durham, N. C.

—(Flood Control.)

Harza Engineering Co., Chicago.

—(Forest.)

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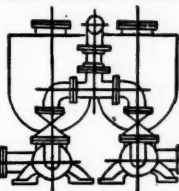
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HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I.
Poe Piping & Heating Co., Greenville, S. C.

HOISTING MACHINERY.
Clyde Iron Works Sales Co., Duluth, Minn.
Lidgerwood Mfg. Co., Elizabeth, N. J.

HOISTS (Air Portable.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Electric.)
Clyde Iron Works Sales Co., Duluth, Minn.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp.,
Milwaukee, Wis.
Mundy Hoisting Engine Co., J. S.,
Newark, N. J.
Novo Engine Co., Lansing, Mich.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Equipment Corp. of America, Chicago, Ill.
Mundy Hoisting Engine Co., J. S.,
Newark, N. J.
National Equipment Corp. (C. H. & E.
Division), Milwaukee, Wis.
Novo Engine Co., Lansing, Mich.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Steam.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S.,
Newark, N. J.
Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)
Connors Steel Co., Birmingham, Ala.

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Blaw-Knox Co., Pittsburgh, Pa.
Erie Steel Construction Co., Erie, Pa.

HOSE (Rubber.)
Republic Rubber Co., Youngstown, Ohio.

HOTELS.
Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.
Eichleay, Jr., Co., John, Pittsburgh.

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Grinnell Co., Inc., Providence, R. I.

HYDRAULIC PRESSES (Car Wheels.)
Tomlin-Harris Machine Co., Cordele, Ga.

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Ludlow Valve Mfg. Co., The, Troy, N. Y.
Myers & Bro. Co., The, F. E., Ashland, O.
Vogt Brothers Mfg. Co., Louisville, Ky.
Wood & Co., R. D., Philadelphia, Pa.

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Central Power & Light Co., San Antonio.
Georgia Power Co., Atlanta, Ga.
Texas Power & Light Co., Dallas, Texas.

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Ingersoll-Rand Co., New York, N. Y.
Vogt Mach. Co., Henry, Louisville, Ky.

INCINERATORS.
Duplex Hanger Co., Cleveland, Ohio.

INCORPORATORS.
Delaware Registration Trust Co., Wilmington, Del.

INJECTORS.
Jenkins Bros., New York, N. Y.
Randle Machinery Co., The, Cincinnati, O.

INSULATING (Board)
Armstrong Cork & Insulation Co., Lancaster, Pa.

—Materials.
General Electric Co., Schenectady, N. Y.
Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Gay & Co., W. O., New York City.
Hanchett Bond Co., Inc., The, Chicago, Ill.
Mercantile Trust Co., Baltimore, Md.
Nuveen & Co., John, Chicago.
Provident Savings Bank & Trust Co.,
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Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

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American Rolling Mill Co., Middletown, O.

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Clark, Lloyd T., Southern Pines, N. C.

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General Electric Vapor Lamp Co., Hoboken, N. J.
Western Electric Co., New York City.

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Ingalls Iron Works Co., Birmingham, Ala.

LATHES.
Sebastian Lath Co., Cincinnati, Ohio.

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Young & Selden Co., Baltimore, Md.

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Porter Co., H. K., Pittsburgh, Pa.
—(Gasoline.)
Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.
—(Industrial.)
Equipment Corp. of America, Chicago, Ill.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.
Whitcomb Co., Geo. D., Rochelle, Ill.
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Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.
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Porter Co., H. K., Pittsburgh, Pa.
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Gulf Refining Co., Pittsburgh, Pa.

LUBRICATORS (Force Feed.)
Lunkenheimer Co., The, Cincinnati, O.

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Kirby Lumber Co., Houston, Texas.
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Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.
Savannah Creos. Co., Savannah, Ga.

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—(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

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Cutler Mail Chute Co., Rochester, N. Y.

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Earle Gear & Machine Co., Phila., Pa.
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Bliss Co., E. W., Brooklyn, N. Y.

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—(Hot.)
Koebring Co., Milwaukee, Wis.
—(Mortar.)
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Jaeger Machine Co., Columbus, Ohio
—(Plaster.)
Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
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General Electric Co., Schenectady, N. Y.
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White Oak Refining Co., Tulsa, Okla.

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White Oak Refining Co., Tulsa, Okla.

—(Cups.)
Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.
Georgia Iron Works, Augusta, Ga.
McLanahan and Stone Machine Co., Hollidaysburg, Pa.

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Southern Engineering Co., Charlotte, N. C.
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Erie Pump & Engine Wks., Medina, N. Y.
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Myers & Bro. Co., The F. E., Ashland, O.

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Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
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Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.
Novo Engine Co., Lansing, Mich.

—(Contractors.)

Erie Pump & Engine Wks., Medina, N. Y.
Novo Engine Co., Lansing, Mich.

—(Deep Well.)

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Luitwieler Pumping Engine Co., Rochester, N. Y.
Novo Engine Co., Lansing, Mich.

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Sterling Engine Co., Buffalo, N. Y.

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—(Sand and Dredging.)

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Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)

Cameron, A. S., Steam Pump Works
(Ingersoll-Rand Co.), New York City.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Works), New York, N. Y.

—(Vacuum.)

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—(Water Works.)

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Manistee Iron Works Co., Manistee, Mich.

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Whitney Metal Tool Co., Rockford, Ill.

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Williams Radiator Co., Los Angeles, Calif.

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Whiting Corp., Harvey, Ill.

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Zelnicker Supply Co., W. A., St. Louis.

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St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville.

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Levis & Co., Henry, Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Zelnicker Supply Co., W. A., St. Louis.

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Koppel Ind. Car & Equip. Co., Koppel, Pa.

—(Marine.)

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Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Southern Engineering Co., Charlotte, N. C.
Truscon Steel Co., Youngstown, Ohio.

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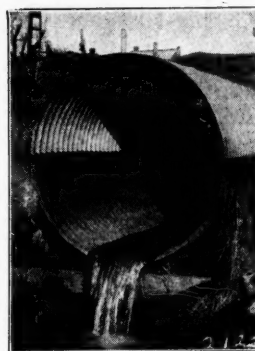
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Atlantic Gulf and Pacific Co., New York
Kansas City Bridge Co., Kansas City.

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Virginia Bridge & Iron Co., Roanoke, Va.

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Hammond Iron Works, Warren, Pa.
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Schofield's Sons Co., J. S., Macon, Ga.
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merding, Pa.

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Electric Wheel Co., Quincy, Ill.

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Electric Wheel Co., Quincy, Ill.

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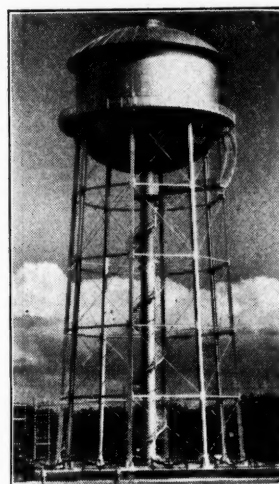
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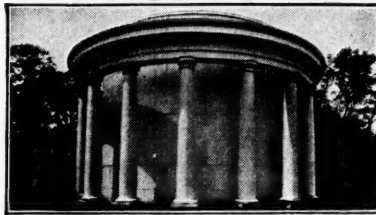
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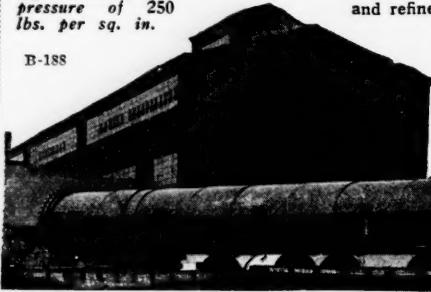
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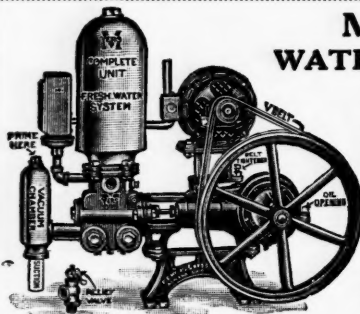
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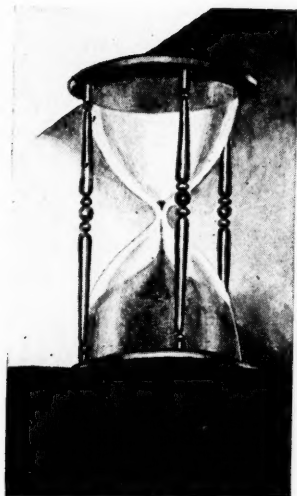
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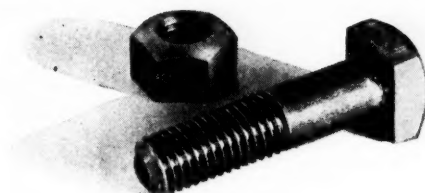
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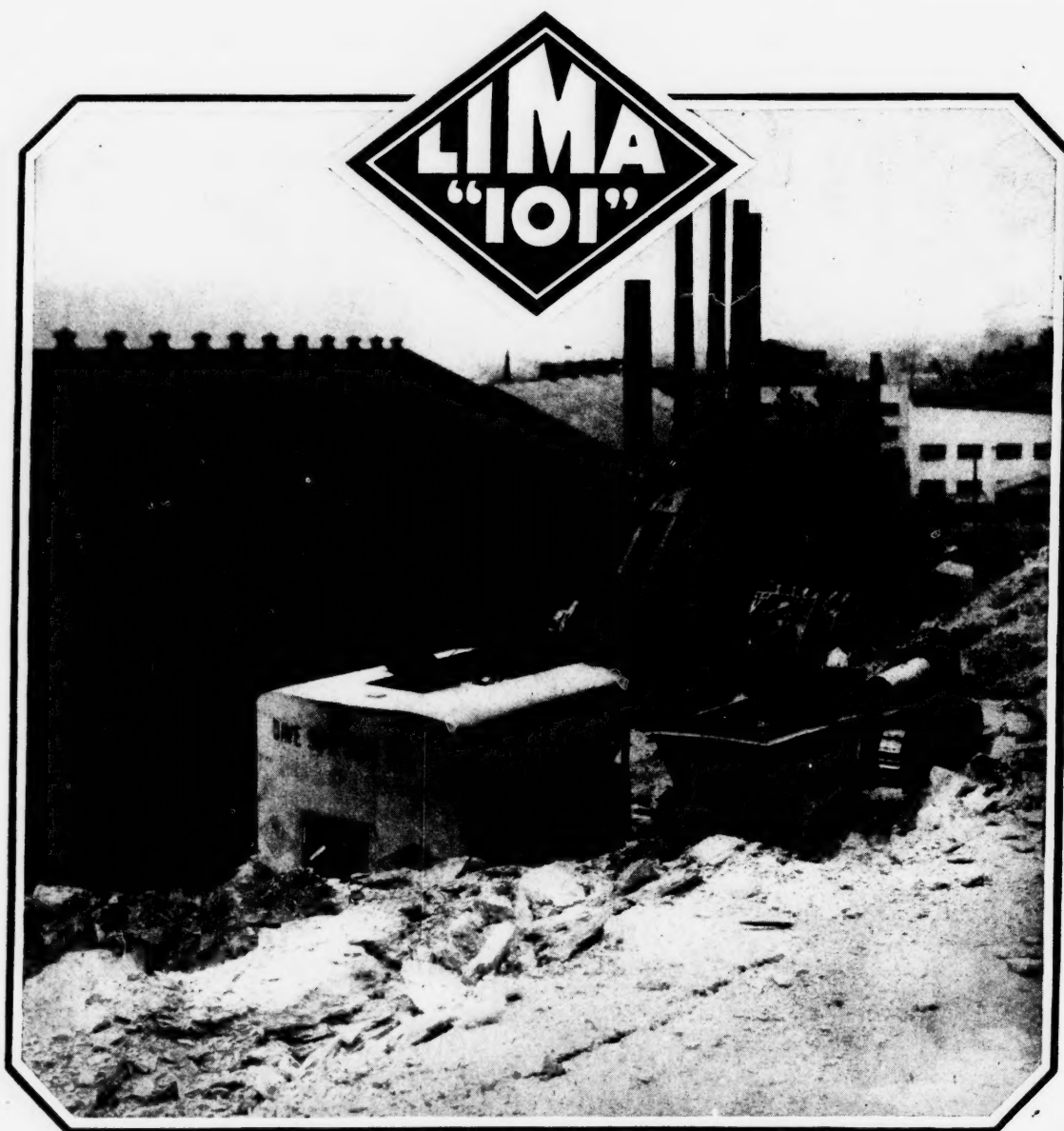


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